

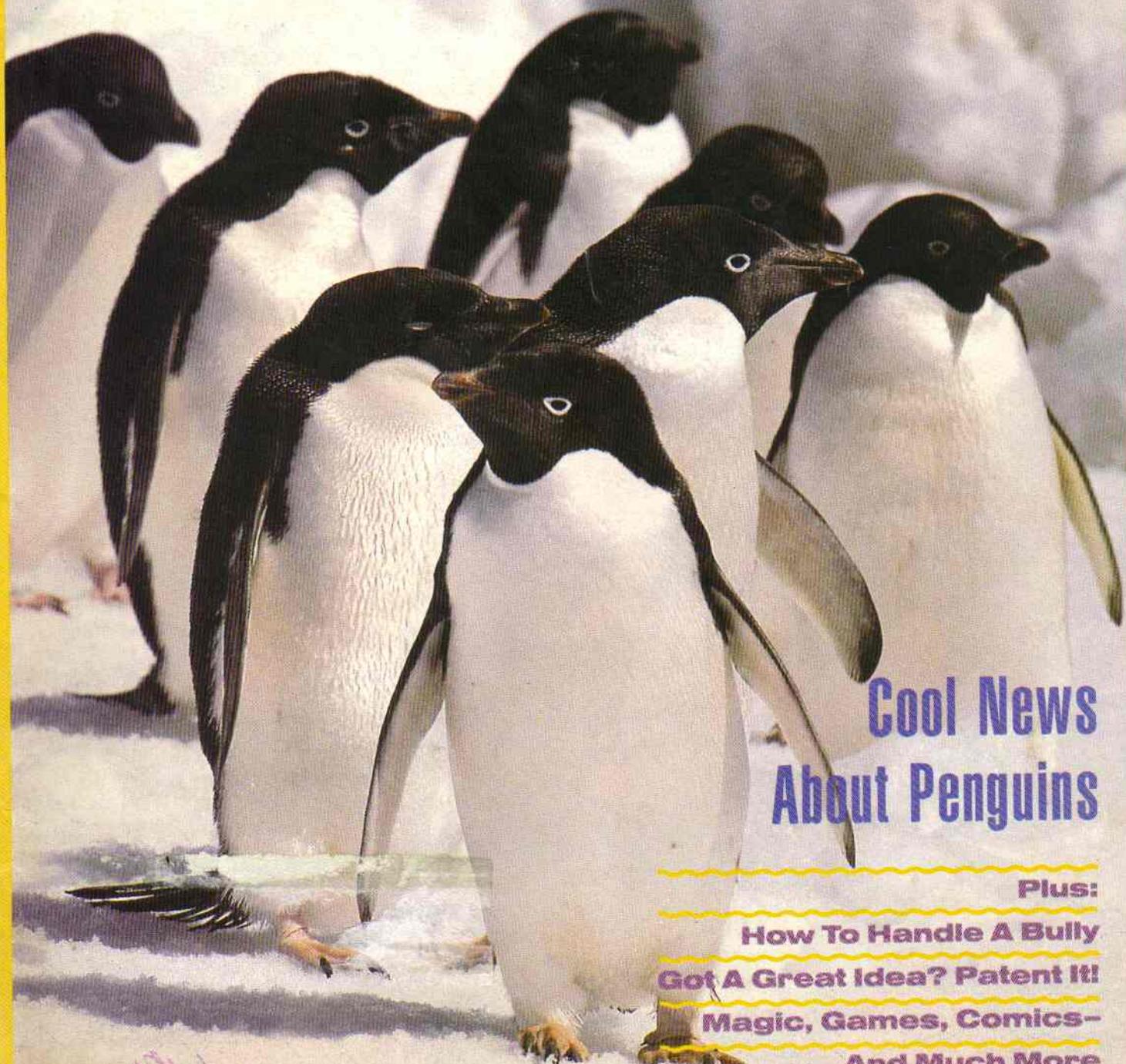
3-2-1

CHILDREN'S TELEVISION WORKSHOP EXPLORES THE WORLD

Jennifer Boyde

CONTACT®

JAN/FEB 1990



Cool News About Penguins

Plus:

How To Handle A Bully
Got A Great Idea? Patent It!
Magic, Games, Comics—
And Much More

JOIN THE CHASE



Join Scrooge McDuck on his greatest challenge ever! You can help him discover the legendary Five Lost Treasures and become the "Richest Duck in the World!"

Team up with the entire DUCKTALES gang and get ready to search...

- The Treacherous Amazon Jungle
- The Snowy-peaked Himalayas
- African Diamond Mines
- Darkest Transylvania
- And even the moon!

Are you "Duck" enough to join them on their adventure? Come along to Duckburg headquarters and see for yourself!



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Winner National Magazine Award
General Excellence



Award Winner/Feature Category

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They're tough.
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Adelie penguins waddle across
the ice of Antarctica. Photo: © Art Wolfe



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TNT

NEWS BLASTS

Hey Look At Us!

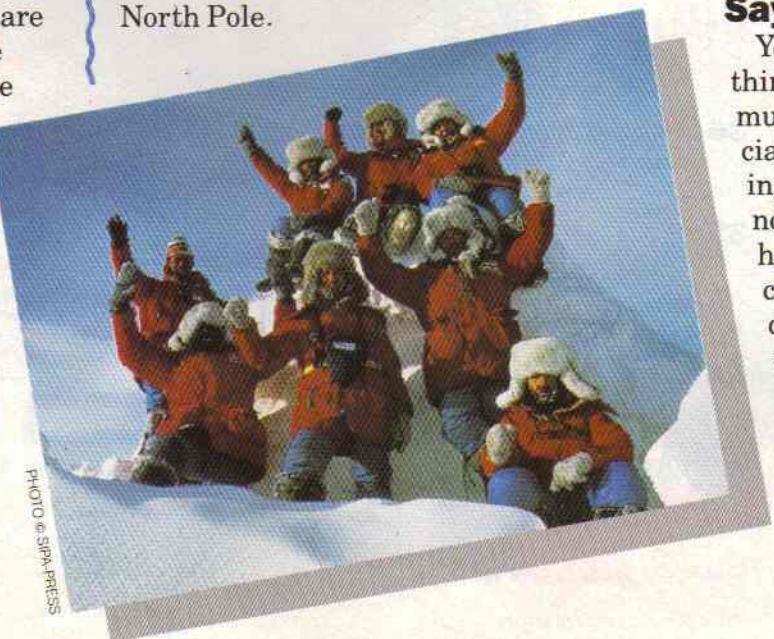
Happy new year! Happy new decade! And a happy new look for 3-2-1 CONTACT! Flip through this issue and you'll see we've made some big changes.

From the cover of the magazine to the Did It! page in the back, you'll

find a fresh, new look. But have no fear: Factoids, Any Questions?, Basic Training—and all the other

departments that you've told us you love are still here. (Turn back to the Contents page to help locate them.)

So kick off the 1990's by celebrating the new look for 3-2-1 CONTACT. And watch for more surprises that will be coming your way. We hope you like them!



Icewalk

Most polar explorers use dogsleds, snowmobiles and snow planes to get where they're going. But Robert Swan is an explorer who believes in doing things the hard way. Last May, Swan and seven other polar explorers returned from a 480-mile walk from northern Canada to the North Pole.

The explorers lugged 300-pound sleds filled with equipment and food. They battled high winds and temperatures as low as minus 70 degrees. Why? The expedition, called "Icewalk," was part of an international "call to action" to help the environment.

The explorers were joined by 22 students from 15 countries at the base camp in Canada—high in the Arctic Circle. The students and explorers took samples of the air and snow to test the level of man-made pollution.

Swan hopes that Icewalk will be the first of many team efforts to help the environment.

Say What?

You may not even think you've got the music on loud—especially if you're wearing headphones in a noisy room. But most headphones fit so close to the eardrum that you could be damaging the eardrum without knowing it.



ILLUSTRATION BY JULIA TALCOTT

That's why an electronics company in England is working on a safety system for headphone-lovers.

When the music reaches a level that could damage the eardrums, the headphones automatically turn off. As soon as you turn down the music to a safe level, the headphones turn back on. That way, even if you're not paying attention to the volume, your headphones are!

Two Scoops for Rover

The ice cream that humans eat isn't fit for, well—dogs. It's full of sugar and fats that dogs have a hard time digesting. But William Tyznik has a "pawsible" solution: "Frosty Paws."

Frosty Paws is already in many supermarkets, next to the ice creams that humans love to eat. Though Frosty Paws tastes yucky to humans, it's healthful and tasty to dogs. It's made with soy and whey, instead of cream and sugar.

But dogs who eat it don't know it's good for them. They just lap it up!



ILLUSTRATION BY DICK DANIELS

What a Relief!

Breaking an arm or leg is bad enough, but wearing a cast can drive you crazy. It's okay for a little while. It's nice and white and all your friends can sign it. But after a few weeks, the skin under the cast starts to itch...and then it starts to smell. What's a cast-wearer to do?

Leni Faas and Bill Spaeth took the problem to a chemist. He told them that the itch and smell is caused by bacteria that grow under the cast. The bacteria are attracted by the moisture, heat and lack of air.

So, the two inventors came up with some temporary relief: "Castblast." It's a mixture of alcohol and talcum powder that

can be sprayed through a tube and inside the cast.

The alcohol cleans the skin and the talcum powder absorbs the

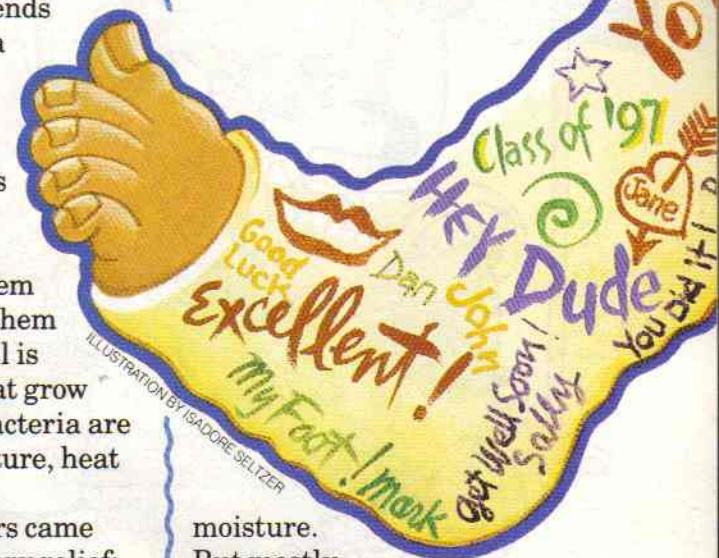


ILLUSTRATION BY ISADORE SELTZER

moisture. But mostly, Castblast makes the skin *feel* better. "It feels icy cold and it lets you sleep through the night," says Faas.

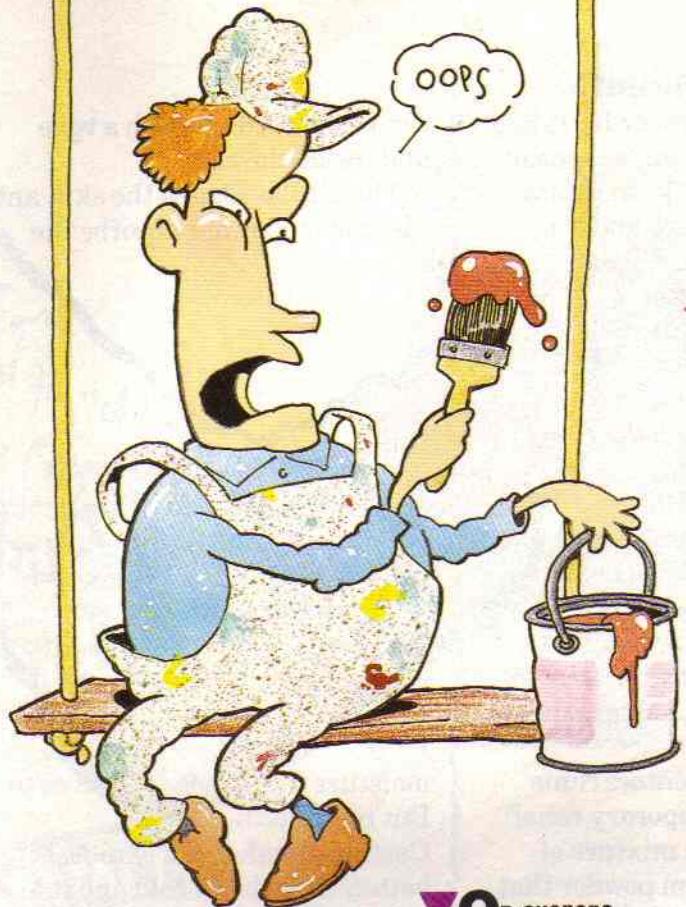


So What's New?

You tell us and you'll get a nifty CONTACT T-shirt—if we print your story. Send us any science story from the news that you think our readers would like to know about. (Be sure to tell us your T-shirt size and where you heard the story.)

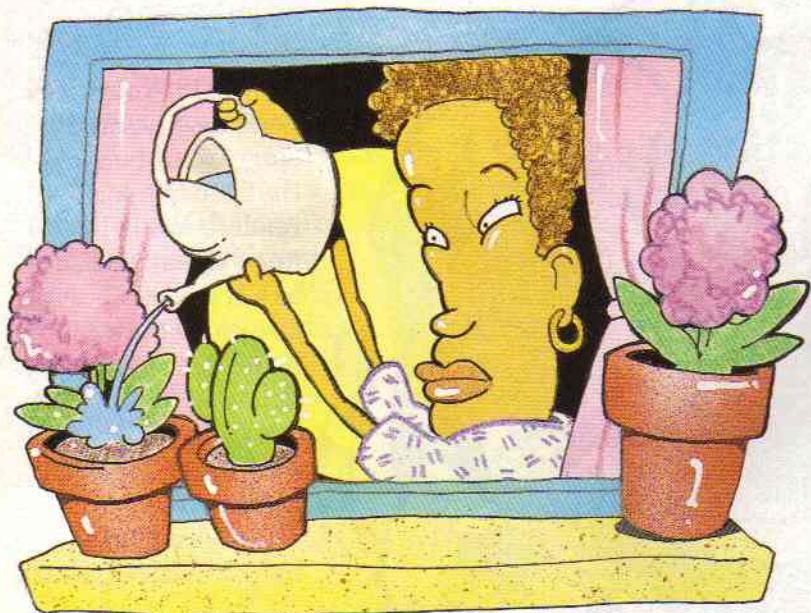
Send to:
TNT
3-2-1 CONTACT
Magazine
1 Lincoln Plaza
New York, NY 10023

FACT



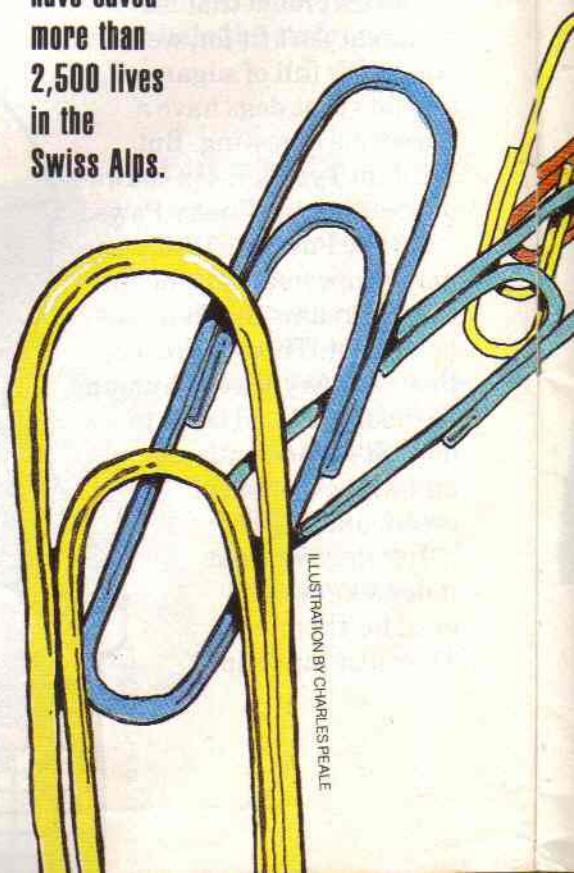
It takes
750 gallons
of paint
to coat
the White
House.

▼ On average,
Americans
spend more
than 17 hours
of every day
indoors.



▲ St. Bernards
have saved
more than
2,500 lives
in the
Swiss Alps.

ILLUSTRATION BY CHARLES PEALE



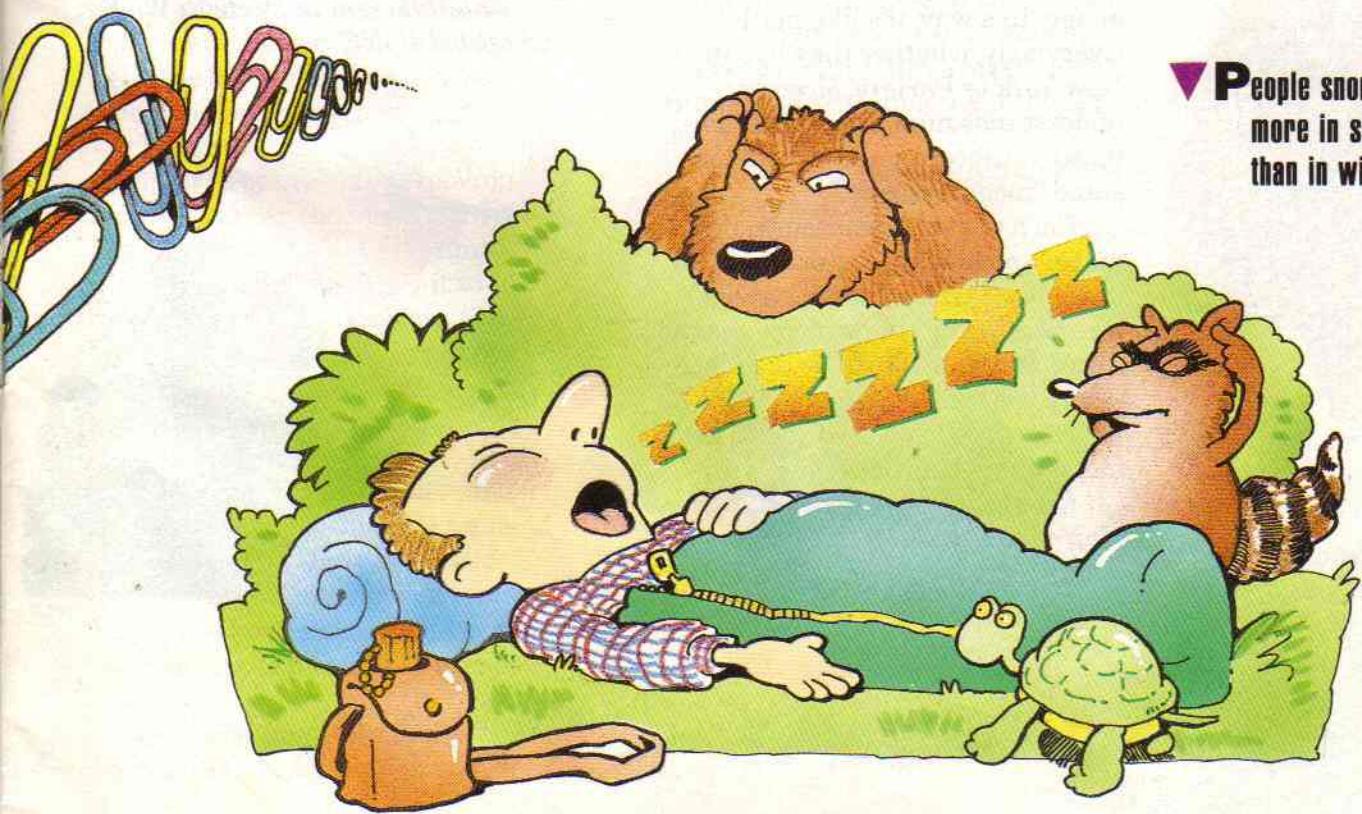
ODDS

▼ **O**ther than humans, pigs are the only mammals that can get sunburned.



▼ **A**mericans use about 35 million paper clips every day.

▼ **P**eople snore more in summer than in winter.



ANY QUESTIONS?

By Amy Roberts



W
H
Y

DO DINOSAURS HAVE SUCH COMPLICATED NAMES?

Can you say "megalosaurus bucklandi" 10 times fast? How about once?

Dinosaur names are pretty hard to say and spell. That's because they are all based on Greek words. A lot of scientific terms are based on Greek or Latin words. They sound complicated but they give scientists all over the world a common language. In a way, it's like math. Everybody, whether they live in New York or Paris or Moscow, understands numbers. And scientists in different countries understand "megalosaurus."

Each part of a dinosaur name means something. For example, in megalosaurus bucklandi, "mega" means great or big, "saurus" means lizard and "bucklandi" is the place where the fossil was found.

Now aren't you glad you've got a name like Susan or John?!

Question sent in by Rhiannon Huffman, Calumet, IA.

HOW

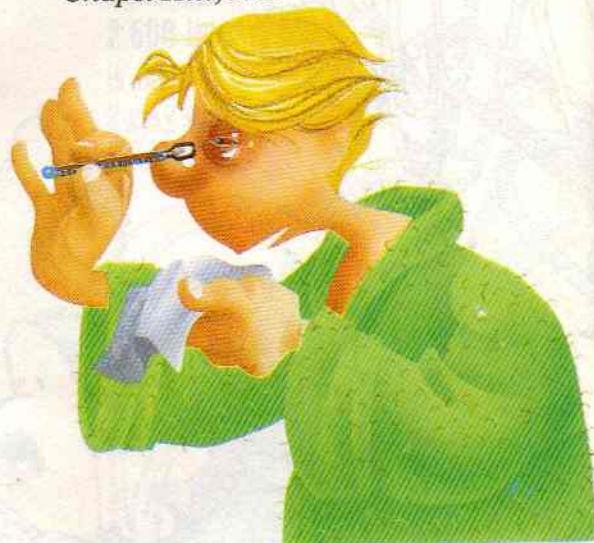
DO YOU CATCH A COLD?

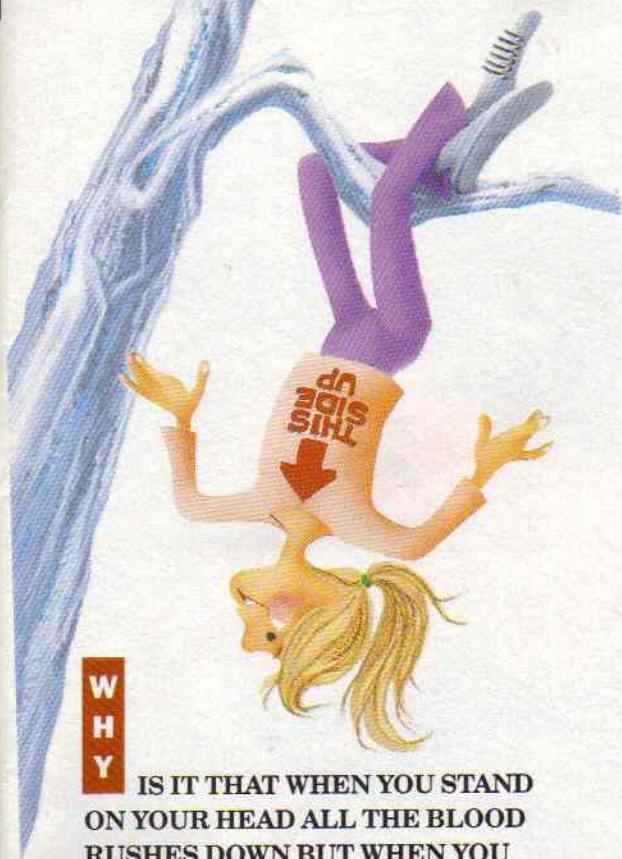
Colds are easy to catch. Just run really fast! No, but seriously...colds are the most common human sickness. Most grown-ups get from one to three colds a year—and kids get even more. Colds are caused by many kinds of viruses. (That's why it's so hard to find a cure.)

A virus is a microscopic (very tiny) kind of parasite. A parasite is an organism that cannot live on its own. So what a virus does is take over another cell—called the host cell—to help it do its work. In the case of a cold, the virus takes over a cell in your body. It uses that cell to make a lot more viruses. These viruses attach themselves to other cells in your body and the cold spreads.

What can you do to avoid catching a cold? Try not to get tired and run down. And remember to wash your hands before meals. Because you touch so many things, you can get the cold virus on your hands. Then if you put your hands near your mouth or your eyes, the virus can enter your body.

Question sent in by Heidi Wicker, Chapel Hill, NC.





**W
H
Y**

IS IT THAT WHEN YOU STAND ON YOUR HEAD ALL THE BLOOD RUSHES DOWN BUT WHEN YOU STAND ON YOUR FEET IT DOESN'T?

People are designed to stand on their feet, not on their heads. Your body has ways to keep all its blood from falling down into your feet. Since you don't usually stand on your head, it doesn't have a way to keep the blood out of your head when you're topsy-turvy.

Your heart is your body's main pump. It keeps the blood moving, helping to keep the blood from collecting in your feet. As it pumps blood, your arteries carry it to the different parts of your body. (The blood has oxygen in it, which your body needs.) Your veins then carry the blood back to the heart and lungs to get more oxygen.

All veins have a system of one-way valves. As the blood is pumped up your legs, the valves close to keep it from sliding down again. Veins also have a muscle layer that helps push the blood back to the heart.

Question sent in by Laura Schreag, Michigan City, IN.

**W
H
Y**

DO BUGS HAVE MORE THAN TWO EYES?

Most insects have two "compound" eyes. These are big eyes that are divided into 100 tiny eyes. So, a house fly, for example, has eyes all across the top of its head. This lets the fly see all around rather than just straight ahead.

But a house fly's eyes are not like human eyes. They are much simpler. Each eye sees only a small part of an image. These eyes don't move at all. (Flies can't look to the right or left the way you can.) And flies don't see clearly. They can see shades of light and dark and they can spot motion. So when you try to swat them, they can get away.

Spiders have eight eyes. But they are not compound eyes. Because spiders hunt for food, their vision needs to be sharper. The jumping spider has eight eyes arranged in three rows. It can see all around at once, which, of course, makes catching flies a lot easier. But eight eyes? Imagine if the spider needed glasses!

Question sent in by Karen French, Philadelphia, NY.



Do you have a question
that no one seems able to answer?
Why not ask us? Write to:
Any Questions? 3-2-1
Contact, P.O. Box 40, Vernon,
NJ 07462



CONTACT
LENS

OTTERLY ADORABLE

Say hello—and welcome back—to the North American river otter.

Until recently, the river otter was disappearing from all over North America. Hunters trapped it for its fur. But today, the otter is making a comeback and its future seems brighter. River otters are being raised on otter farms and then released into the wild where they mate and have babies.

The mammal, which is related to minks, skunks, badgers and weasels, lives near lakes, streams, marshes and swamps. It spends part of its time in the water and part out—sunning itself to keep warm.

Unlike other adult animals, adult river otters spend much of their day playing—usually something only baby animals of a species do. Instead of the saying, “It’s a dog’s life,” maybe people should start saying “It’s an otter’s life!”

What Makes Bullies Tick?

Most bullies are boys—usually older and stronger than the kids they pick on. Girls can be bullies too, but they tend to find different ways to hurt kids—usually other girls.

"Girls may cut someone with a word, with a look, not let them talk in a group, or keep them out of the group altogether," says Dr. Nathaniel M. Floyd.

Dr. Floyd has studied more than 200 bullies and who they hurt. Many bullies, he believes, have been bullied themselves at some point. At home or at school, these kids probably didn't get the care and attention they needed from their parents and teachers. "In every bully, there is the memory of the little kid who was once picked on himself," says Dr. Floyd. He or she bullies "as if to say,

'You're the one who's going to get hurt, not me.'

Kenneth Dodge, of Vanderbilt University, also studies bullies. What kind of kids turn

into bullies? "The kid who gets angry easily, has temper tantrums, and might get into a lot of fights," says Dodge. "Somebody calls him a name or jostles him in the hallway and instead of tossing it off as a joke as other kids might, he gets very angry and comes out fighting."

READ ON



Bullies Look For Easy Targets

Bullies will often lash out at anyone. "I think it's all about power," says George McKenna, a Los Angeles high school principal. If someone feels powerless, picking on someone else may be a way of making themselves feel better.

Sometimes, bullies look for certain types of kids to pick on. It might be someone who the bully thinks gets special attention from a teacher or someone who doesn't look strong enough to stand up to him. A bully might pick on someone who he doesn't think has many friends.

Picking on people may make a bully feel good. But the person who gets bullied feels helpless—and very angry. "Once, after this girl bothered me, I had some wild dreams," says Lania. "I dreamt that I had superpowers and would really be able to fix her. I pictured standing over her, saying, 'Go on, get up if you dare!'"

Using your anger to fight

BULLY

bullies is a tempting response. But there are better ways to "fight" bullies—just by using your head.

Think About It...

Imagine this: You're in the lunchroom. A bully grabs your collar and says, "Give me five dollars or I'll get you after school." What would you do?

CONTACT asked kids and experts how they would deal with this bully's threat. Here's what they had to say:

"I'd get away from him as fast as I could," says Reid. "I wouldn't

"When you use your head instead of your fists you can usually beat a bully at his or her own game."

answer him. And I'd walk home from school a different way."

Dr. Robert Spitalnik is a psychologist who works with kids. He thinks Reid's reaction is good. He adds, "Public places—like a lunchroom—are safe places. You're least likely to get hurt here. But make sure to walk home with friends or family. And

think about how you're going to act when you see this kid tomorrow!"

Now, imagine this: You're in the school hallway. A bully shoves you, hard. Then she calls you names and starts to

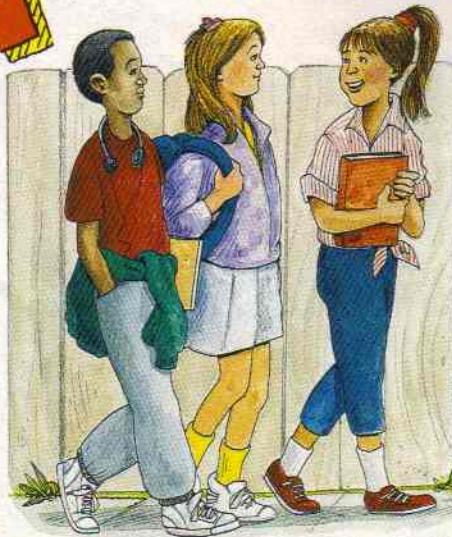
move as if she's going to hit you again.

Both kids and experts agreed that getting punched or shoved is different from getting cor-

4 TIPS
TO HELP YOU
DEAL
WITH
A BULLY

1

TWO'S COMPANY
Don't go where bullies hang out. If you can, travel with friends to and from school.



2

MAKE LIKE A BANANA... AND SPLIT
It's better to avoid a fight—by using your sneakers. Head for a crowded place, like a lunchroom, and find a teacher.



ILLUSTRATIONS BY JOHN MCKINLEY



nered and asked for money. But they had different solutions.

"First, I'd try not to be in the hall alone," says Lania. "If I'm with a friend, I'd get her to call a teacher. And then, if I had to, I'd shove back until the teacher came."

Sometimes you can't avoid a fight," says Dr. Spitalnik.

"But try to stay cool and don't respond to angry words."

Dr. Floyd suggests another method: "Say, 'Get out of my face and leave me alone!'" Stand up straight. Let your voice sound strong and firm—look like you mean business when you tell a bully to go away, adds Dr. Floyd.

But is it smart to stand and fight a bully? Never, agree both doctors. It's better—and brighter—to use your sneakers. Run. "This isn't a game you can win by being physical," adds Dr. Floyd.

Talk About It!

The experts and kids CONTACT spoke with all agreed on one rule for any bullying situation: Talk about it with someone you trust. Your friends or parents can help you figure out

what happened, and why.

"Making a decision on how to deal with a bully is hard to do by yourself," says Dr. Spitalnik. "Adults can help you figure out the best way to deal with this bully—to today, the next day, and the day after that!"

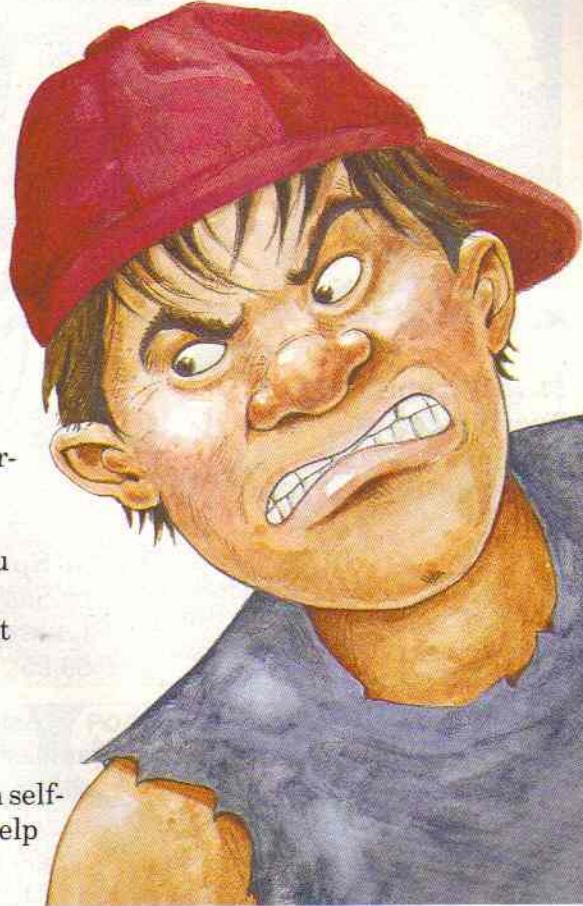
Then, "bully-proof" yourself: Act like you know where you're going, look ahead of yourself when you walk, stand up straight and tall. Keep in mind that sometimes it's better not to argue with a kid who has a temper.

Sometimes, classes in self-defense skills can help you feel stronger. But, adds Dr. Floyd, "The important thing is not actually defending yourself but making bullies *think* you can."

Finally, make a plan. Think and talk about how you will act when you see this bully again. What will you say? How will you stand, dress, and look at him? Act out these ideas. The more you think about it, the less

scared you will feel—because you're prepared.

When you use your head instead of your fists you can usually beat a bully at his or her own game. Why? Because a bully hears the message you're sending: I can handle this. I have power, too. And I don't have to fight back to win. ♦



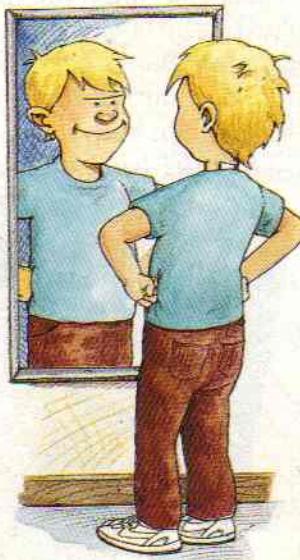
3

GOT A MINUTE?
Talk to people you trust (parents, teachers, friends) about how to deal with a bully.



4

GO AHEAD, MAKE MY DAY!
Practice acting confident. How will you act and talk the next time someone bothers you?



REVIEWS

BOOKS

Meg Mackintosh: Two Mysteries
by *Lucinda Landon*
A Bantam-Skylark Book,
\$2.75

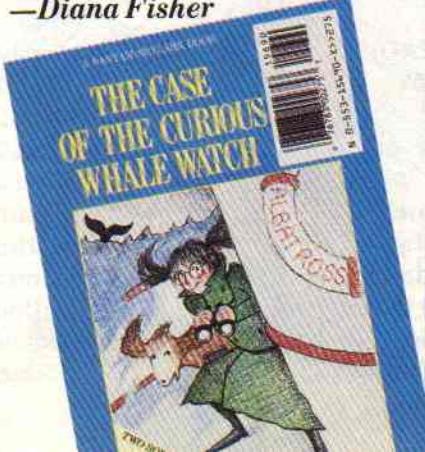
What Meg Mackintosh truly wants to be is a detective. But before she can join her brother's Detective Club, she must prove that she can solve a mystery all by herself.

Her chance arrives in *The Case of the Missing Babe Ruth Baseball*. In this story, Meg discovers a trail of clues leading to her grandfather's long lost prize possession, a baseball signed by Babe Ruth. Soon Meg is on her way to solving her first mystery—and finally becoming a member of the Detective Club.

And you can help her! The story will stop at times to ask if you know what to do next. By keeping track of all her clues, you and Meg can solve mysteries together.

After you finish the first story, flip the book over to read *The Case of the Curious Whale Watch*. It's another fun mystery which you can help solve.

—Diana Fisher

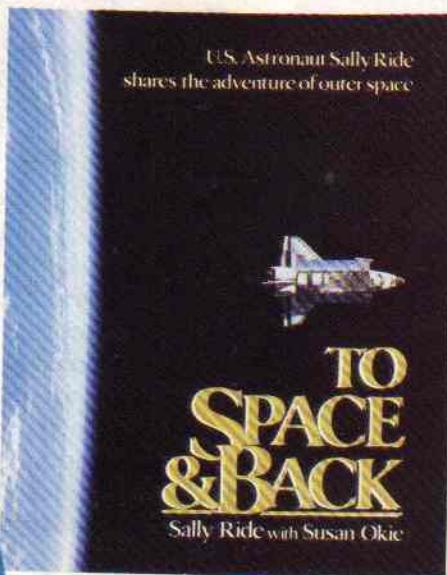


To Space & Back
by *Sally Ride and Susan Okie*
Lothrop, Lee & Shephard Books,
\$9.95

Astronauts have fat faces. Or at least their faces look fat when they're in orbit. That's because, in space, body fluids are no longer being pulled down by gravity, so more fluid stays in upper bodies and faces.

This is only one of the many neat things you'll learn from this book about life aboard a space shuttle. Astronaut Sally Ride describes how astronauts brush their teeth, prepare and eat meals, and use special space toilets. The book is all about everyday life in space. After reading it, you'll feel as if you have travelled *To Space & Back*.

—D.F.



SOFTWARE

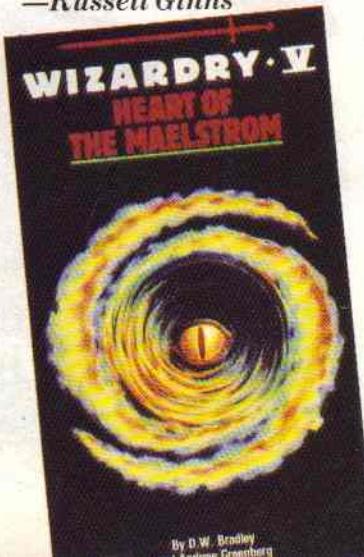
Wizardry V
For *IBM* and *Apple II* computers
Sir-Tech Software, \$45

Help! G'Bli the Gatekeeper, is trapped at the bottom of a deep dungeon. And unless someone comes to the rescue quickly, the whole country of Llylgamyn will be in big trouble. It's up to you to get to the bottom of the maze and save him.

To do this, you'll need to gather the best magicians and warriors in the land and wind your way through level after level of mazes, monsters and surprises.

Unlike a lot of adventure games, *Wizardry V* is full of people and monsters who remember things. If you're nice to someone when you first meet them, they might help you out in the future. And if you fight with someone early on—stay out of their way later! This feature helps to make the game very interesting and very complicated. It could take over 100 hours to finish!

—Russell Ginnis



INSTANT QUAKER[®] OATMEAL

PRESENTS

POPEYE[®]



I'M POPEYE
THE QUAKER MAN,
I EATS ALL THE
OATS I CAN! ♫

POPEYE, OLIVE
AND SWEE'PEA
WERE A BUNCH OF
HAPPY CAMPERS
UNTIL SWEE'PEA
SPOTTED A
SPACE SHIP.

SUDDENLY!

POPEYE! SPACE CREATURES
ARE STEALING SWEE'PEA!
GET YOUR SPINACH!

POW!

GET LOST
IN SPACE,
SPACE
CREATURES!

CAN THE
SPINACH!
I WANTS ME
INSTANT QUAKER
OATMEAL!



ALL THAT EXERCISE MADE
ME HUNGRY FOR MORE
INSTANT QUAKER OATMEAL!

POPEYE
WANTS
A
QUAKER!

TURN THE PAGE AND
LEARN HOW TO JOIN
THE POPEYE
CREW CLUB!



WOOZ You Lost?

Dear CONTACT:

In your story about amusement parks (July/August '89), you said that the WOOZ was in Vanaville, CA. It's not. It's in Vacaville, CA. I know that because I live right by it.

*Nick Paavola
Cordella, CA*

*Oops! Thanks for the correction, Nick.
We sure don't want anyone getting lost before they even step inside the Wooz maze!*

In Focus

Dear CONTACT:

In your July/August issue, you showed us how to make your own optical illusions. I couldn't figure out how to make the "Free Food" illusion work.

*Rochelle Cooley
Beeville, TX*

Rochelle, maybe you are focusing your eyes on your fingers instead of the object across the room. Try following the instructions again, making sure that you focus on something a few feet away—not your fingers.

We're In The Money

Dear CONTACT:

I think there's a mistake in the July/August '89 issue's answer to "Family Sighs." Isn't the total \$256 instead of \$255? Could you please tell 3-2-1 CONTACT readers how you got your answer? Thanks.

*Joanna Jones
Chattanooga, TN*

We got lots of letters from readers who were calculating \$256 instead of \$255. That's because they doubled the total each day instead of using addition. $1 \times 2 \times 2 \times 2 \times 2 \times 2 \times 2 = 256$ is correct, but that's not what Alec agreed to pay. The correct answer is $1 + 2 + 4 + 8 + 16 + 32 + 64 + 128 = 255$.

Contest Roundup

The grand prize winner of our Optical Illusion Contest was Meaghan Dawley of Alpena, MI. She sent us this mind-boggling photo. Can you figure out how she did it?



Our second place winners were:

*Jeff Dickerson
Dallas, TX* *Andrea Piernock
Philadelphia, PA*

*Adam Ludwig
Farmington Hills, MI* *Cynthia Sempepos
Mountainside, NJ*

*Amanda Hallet
Porter, TX* *Matt Winkel
Englewood, CO*

*Katie Santos
San Jose, CA* *Jill Susan Multon
Alsip, IL*

Our thanks to everyone who sent us illusions. They were out of sight!

We Want Mail!

Dear Readers:

We love hearing from you. Your questions and ideas help us make CONTACT a better magazine. So why not drop us a line? We can't answer every letter, but we do read them all. Send your mail to:

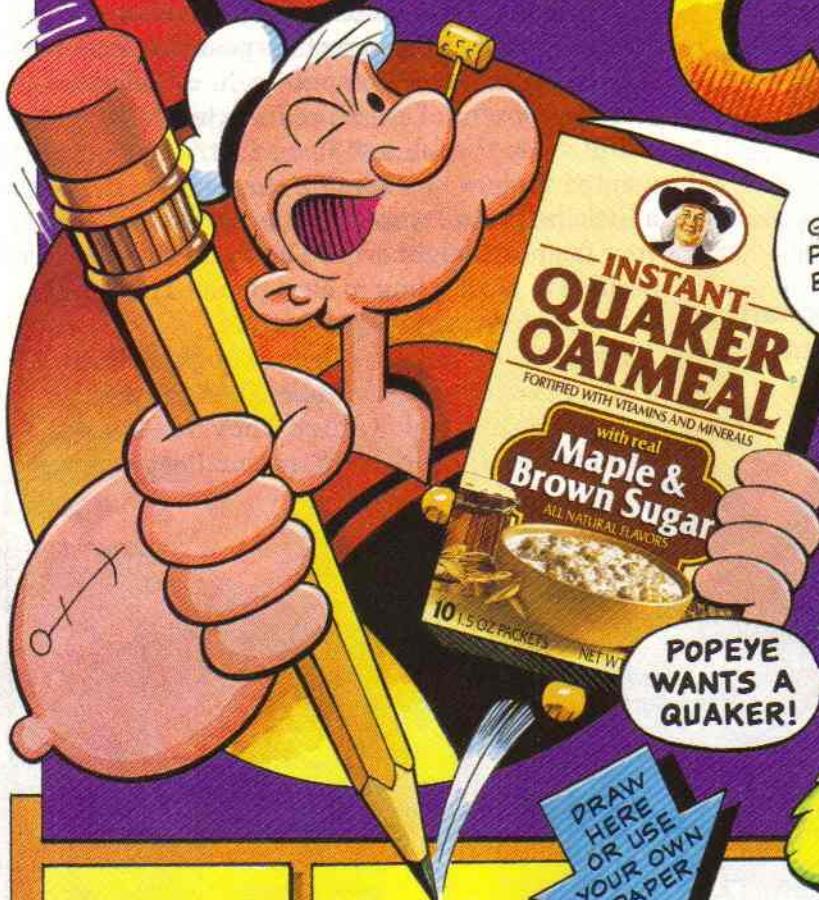
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Vernon, NJ 07462*



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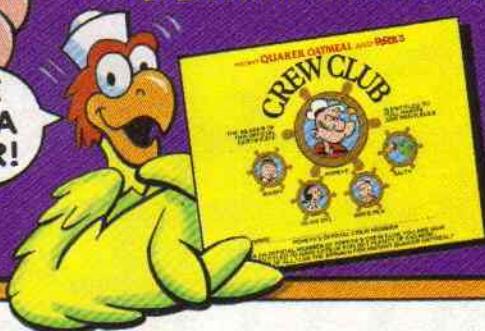
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POPEYE CREW CLUB!



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shutter -bug!

by Richard
Chevat

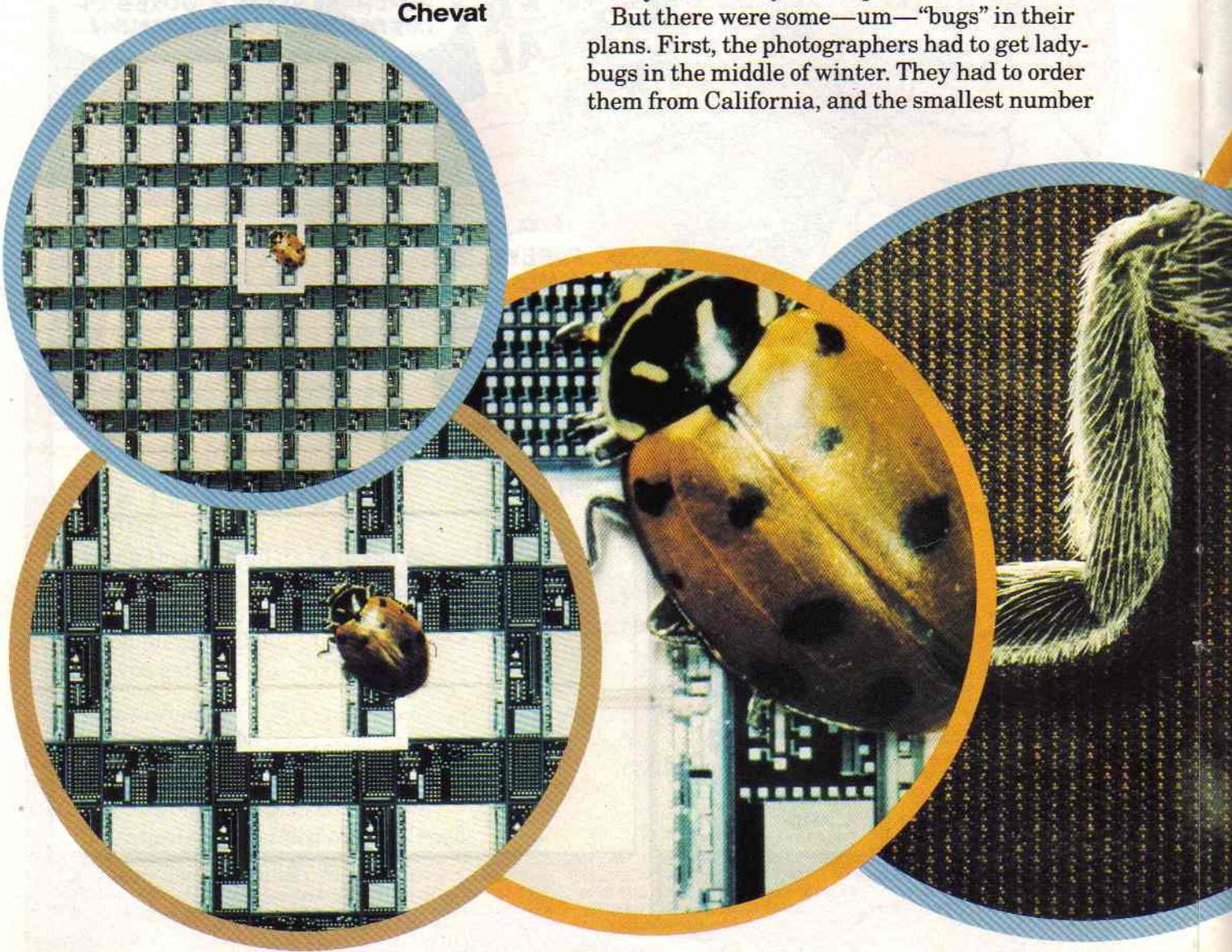
It came from beyond the backyard! It crawled over anything in its path! The only way to stop it was to freeze it! It was—The Invasion of the Ladybug!!!

It sounds like a monster movie, but it happened at a photo studio in Dallas, Texas. It all started when the engineers at Texas Instruments wanted to show how small a microchip is.

Texas Instruments is the company that invented the semiconductor—the electronic marvel that makes microchips possible. Without the microchip, microcomputers, hand calculators, and dozens of other products wouldn't exist.

But when the folks at Texas Instruments wanted to show how small a chip is, they needed a little help. And what could be smaller than your friendly neighborhood ladybug. So they decided to place a bug in each photo. That would show just how tiny the chips are.

But there were some—um—"bugs" in their plans. First, the photographers had to get ladybugs in the middle of winter. They had to order them from California, and the smallest number



they could buy was 250!

Then they had another problem—how do you get a ladybug to sit in one place long enough to take a photo? You don't. Every time the photographer got ready to shoot a picture, the ladybug model would crawl away. Finally, the engineers found a real cool solution to the problem. They froze the ladybug!

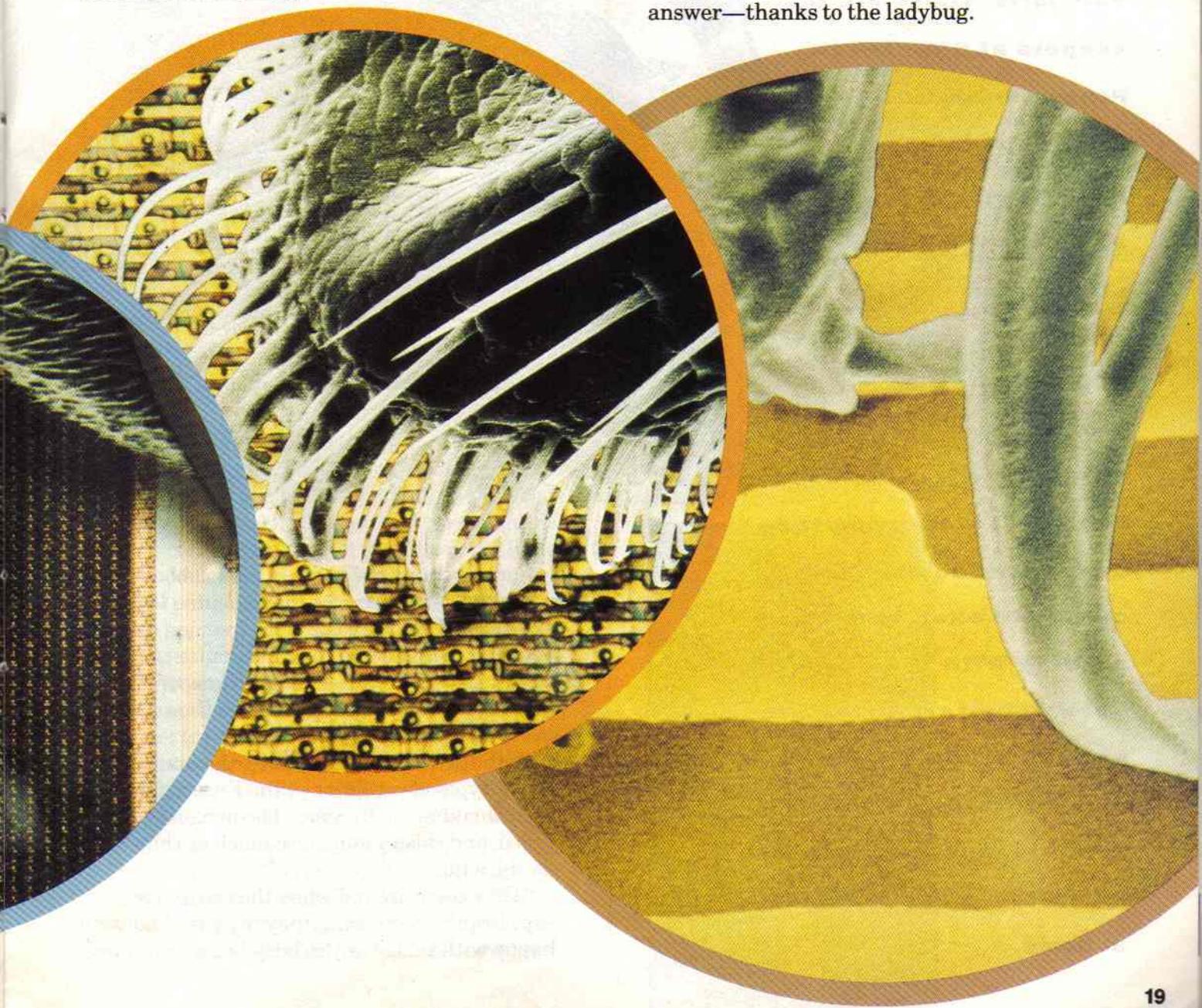
The first four photos were made with a regular camera and lens. To make the last two, the photographer had to use a special kind of microscope called an electron scanning microscope.

In the first photo, you can see the ladybug lifesize. It is sitting on a silicon *wafer*. Each of the white squares on the wafer is one chip. Each chip will hold over 64,000 bits of information in a computer's memory.

The fourth photo shows the chip 45 times life-size. Do you notice the rows of brown dots under the ladybug's leg? They are the computer's memory cells. Each can hold an electric charge. That's how a computer stores information.

In the last photo, you can see how really tiny the conductors on a chip are. They're smaller than the hair on a ladybug's leg! This photo is 3,600 times life size! The curved objects are the hairs on the ladybug's leg. The thick yellow lines are the chip's *conductors*. They act like wires and carry the signals through the chip. Each conductor is only 2.7 *microns* wide. That's about 100 millionths of an inch!

No wonder they call them *microchips*! So if someone should ever bug you with a question about how small a chip is, you'll know the answer—thanks to the ladybug.



PENGUIN

It's 5:00 in the morning on a warm day in San Diego, California. Preparing for work, a group of men and women bundle up in heavy jackets, gloves, boots, and ear-muffs. These are the keepers at Sea World's Penguin Encounter. They are about to enter their work-place—a freezer the size of a home.

Inside, about 500 penguins are keeping busy. They're running around, swimming, building nests of pebbles, caring for babies, feeding, calling to each other, and arguing with their neighbors over territory. The penguins come from far-away Antarctica, and the keepers must go to great lengths to make them feel at home.

AN ICE PLACE TO VISIT!

by Sybil Rosen and Eric Weiner



PHOTO: GARTH WOLFE

For one thing, the keepers make about 15,000 pounds of snow a day for the penguins to run around on. "We keep the place freezing cold—between 18 and 28 degrees Fahrenheit," says Frank Twohy, the chief penguin keeper. "We also regulate the lights to imitate the seasons in Antarctica."

With the help of the keepers, the many different types of penguins at the Encounter have been thriving for 15 years. The penguins live, breed, and raise young here much as they would in the wild.

"They come around when they're hungry," says Frank. "After that, they're gone. And we're happy with that. They're busy being penguins."



PARADISE

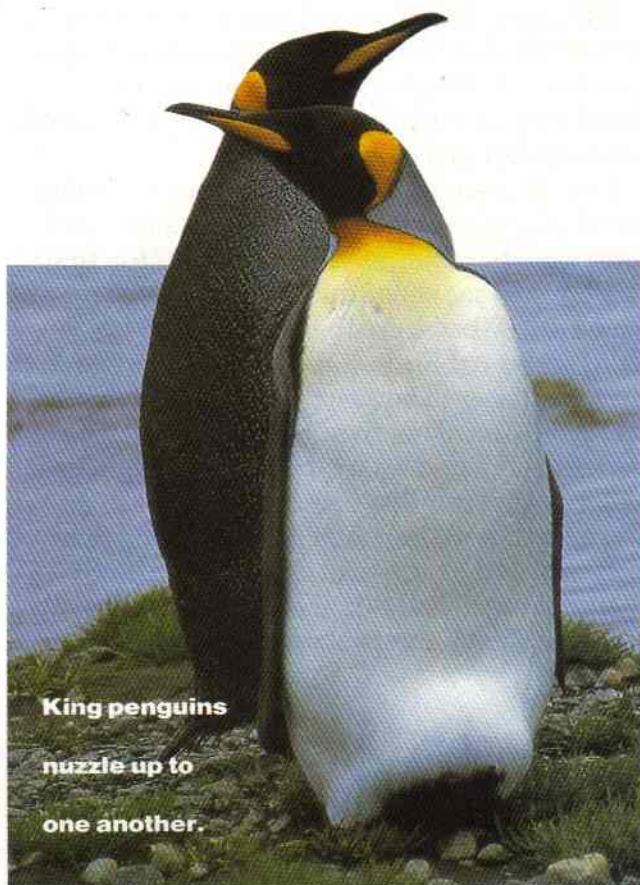


PHOTO © 1986 ERWIN & PEGGY BAUER

For visitors to Sea World, watching penguins being penguins is a treat. But for Ann Bowles, a biologist, it's much more than that. Ann studies penguin behavior. She's been watching the colony at Sea World for 10 years. In fact, she's spent so many hours in the freezer that the penguins seem to consider her one of their own, if a little strange-looking.

"Most penguins are completely unafraid of human beings," Ann told CONTACT. In Antarctica, the only real danger to penguins is in the water—leopard seals and killer whales. On land they have learned to be trusting. "So these guys just treat me as one of the members of the group," says Ann, laughing. "They lean on me and shove me around just the way they would shove another penguin around. It's like being part of a very big easy-going family."

"Penguins stand very close together, no more than a few inches apart," explains Ann. "So whenever they move around they just kind of bonk into each other." Sticking close together

helps penguins stay warm. It also helps protect them from would-be attackers.

That's why, says Ann, they do everything as a group. "They walk together, they swim together. When they dive down, they all dive down at the same time."

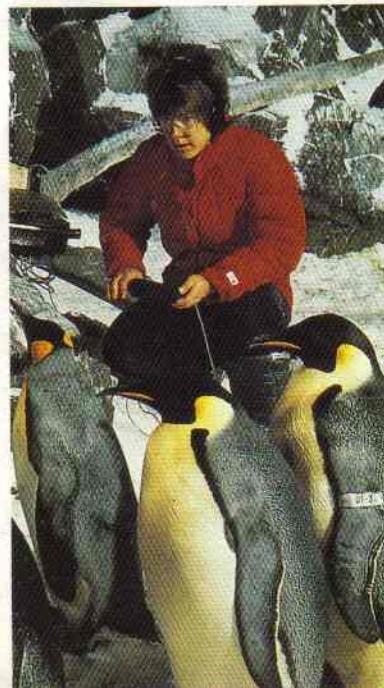


King Tut

The penguins all stay in groups, but they do not all act alike. "Each of them has a completely different personality," says Ann. "Some are shy, some are more aggressive than others, and some are more friendly."

Frank Twohy likes *all* of the penguins in the colony. But he admits that the keepers all have personal favorites. For Frank, it's "King Tut."

King Tut is a 7-year-old king penguin that Twohy raised himself after the egg was abandoned by its parents. "He's very regal, stately, high-strutting," Twohy says fondly. "When



On location
in Antarctica,
biologist Ann
Bowles records
the calls of
penguins.

I'm inside the Encounter he'll come to me and call up to me. He'll stand beside me and guard me. He's very protective. If other penguins come around, he'll yell at them or poke at them with his bill."

The penguins may have different personalities, but they share a common trait: They are extremely curious. "They'll come right up to you and stare at you," says Ann. "You get this sense of another little person standing there saying 'Well, so who are you?'"



Little People

Many people think of penguins as goofy, adorable little people. "They look directly in front of them," say Ann. "They walk one foot in front of

the other. And they have coloring that looks kind of like a tuxedo."

But, adds Ann, it's important to remember that these chubby waddling creatures are not people at all. They're brave, tough seabirds. Birds that have learned to live in one of the coldest, roughest places in the world.

To do so, penguins had to adapt to swimming in the sea. "Penguin feathers are as small and hard as fish scales," says Ann. In fact, the first explorers to see penguins (in the 1500's) weren't even sure if they were fish or birds.

Penguins *are* birds, but they can't fly. Not in the air, that is. "They can 'fly' through the water," says Ann. Their motion through water is more like the glide of a bird in the air than the wavy movements of a fish.

On land, waddling to and fro, flapping their stiff wings like little arms, penguins are out of their element. Still, they can outrun a human on snow. Pretty amazing considering they have

Chin-strap penguins
are among the
most common
penguins on the ice
of Antarctica.

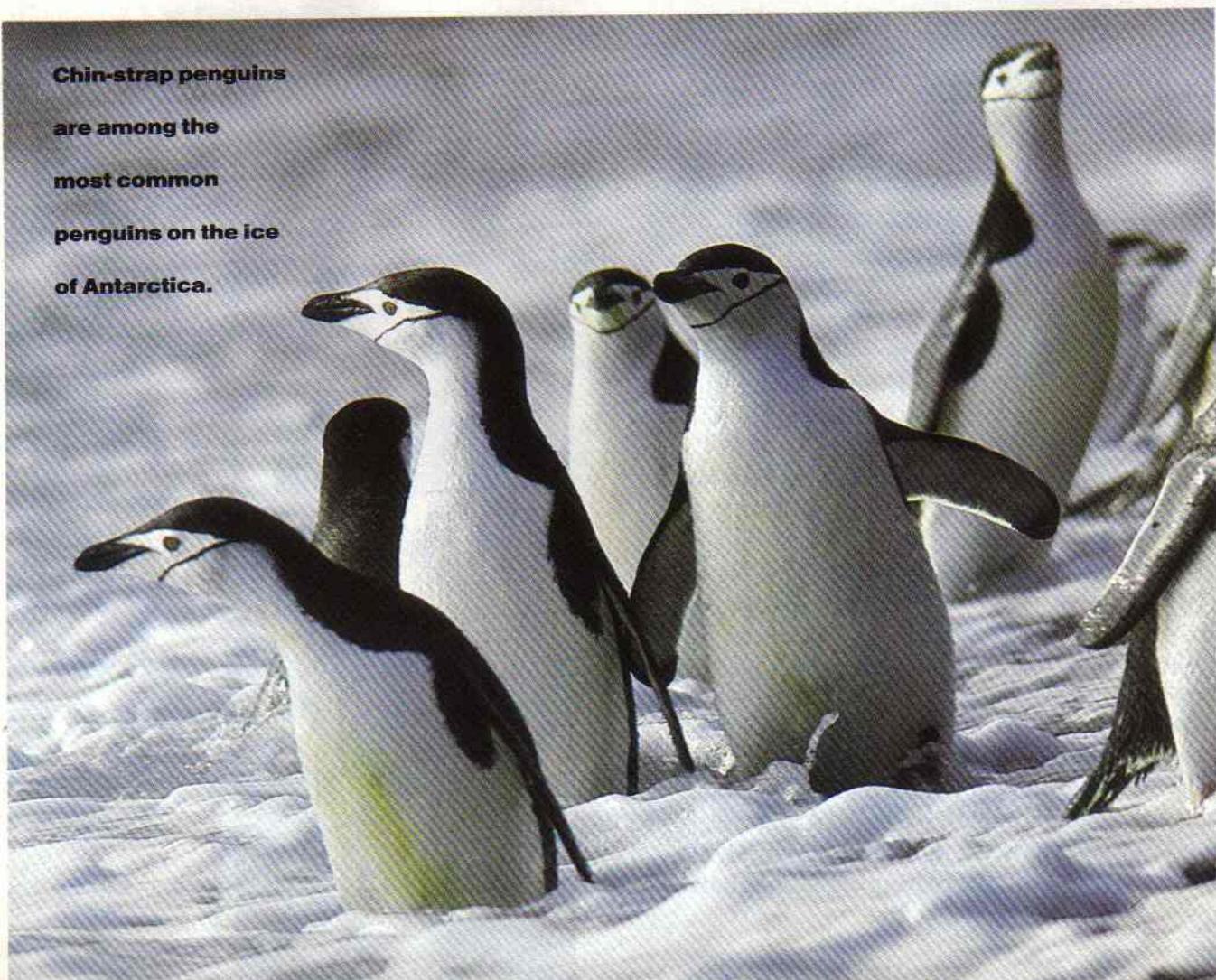


PHOTO © LAURA RILEY/BRUCE COLEMAN INC.

a six-inch stride. When they get tired, they can flop down on their hard slick bellies, give a push with their feet, and toboggan across flat stretches of ice and down hills.



Home, Freezing Home

The Penguin Encounter tries to copy the penguins' natural home as closely as possible. But it's not the real thing. So whenever she can, Ann Bowles visits Antarctica. That's not an easy trip. First she flies to the southern tip of Chile. Then she travels by boat through the Drake Passage. "It's the roughest water in the world," says Ann. "I *always* get seasick."

Despite the seasickness, Ann finds every trip to Antarctica well worth it. "For a biologist it's

just an incredible experience because everywhere you look there are penguins. I'd be standing on a hillside and there would be king penguins all around, some of them kind of scattered out, either courting or going to and from the ocean. And then the hillside is *packed* with penguins. There are probably 10 to 20 thousand birds."

How do these thousands of penguins make it through the freezing Antarctic winter? They live in the water. But do they stay in groups? Nobody knows. Ann would love to spend more time in Antarctica to find out. In fact, you might say she's as curious as a penguin. ♦

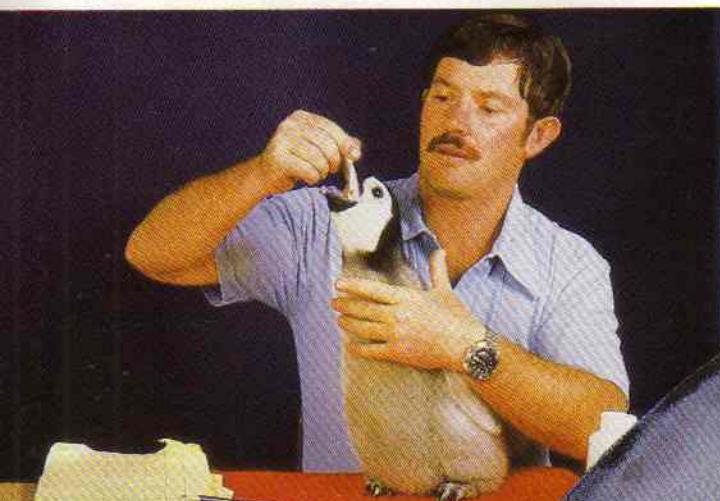


PHOTO © 1989 SEA WORLD INC

▲
Sea World's Frank Twohy

feeds a penguin by hand.

►
This baby chin-strap

penguin is staying close

by its mother.

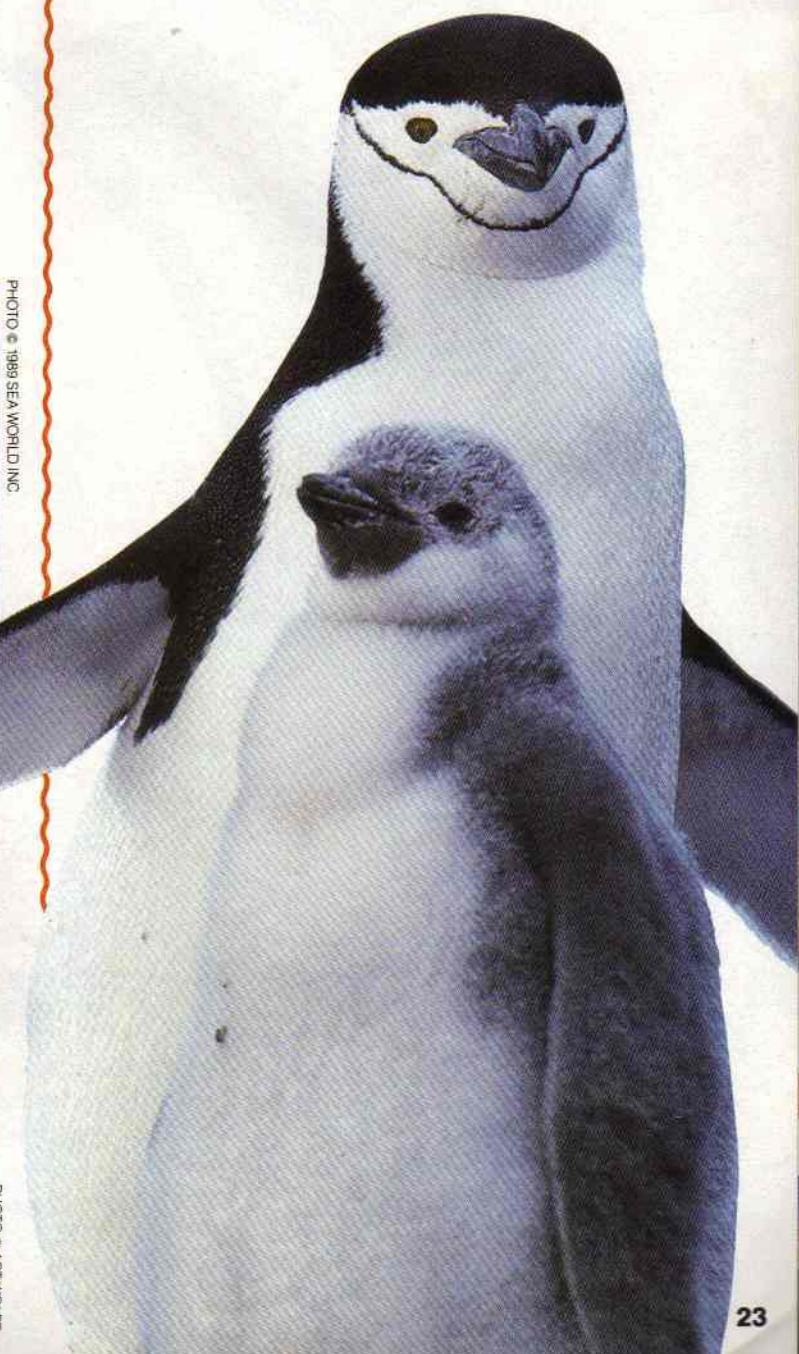
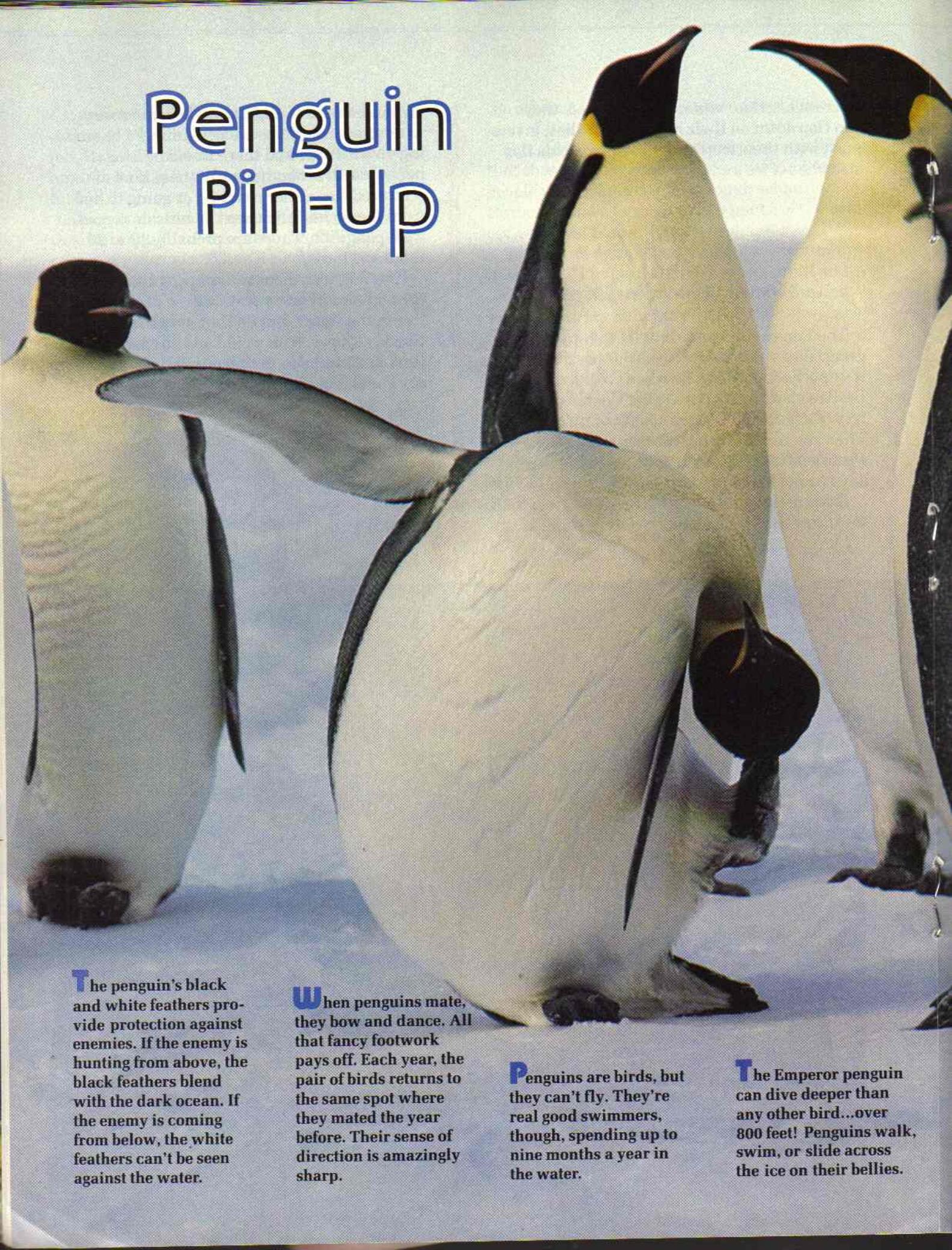


PHOTO © ART WOLFE

Penguin Pin-Up

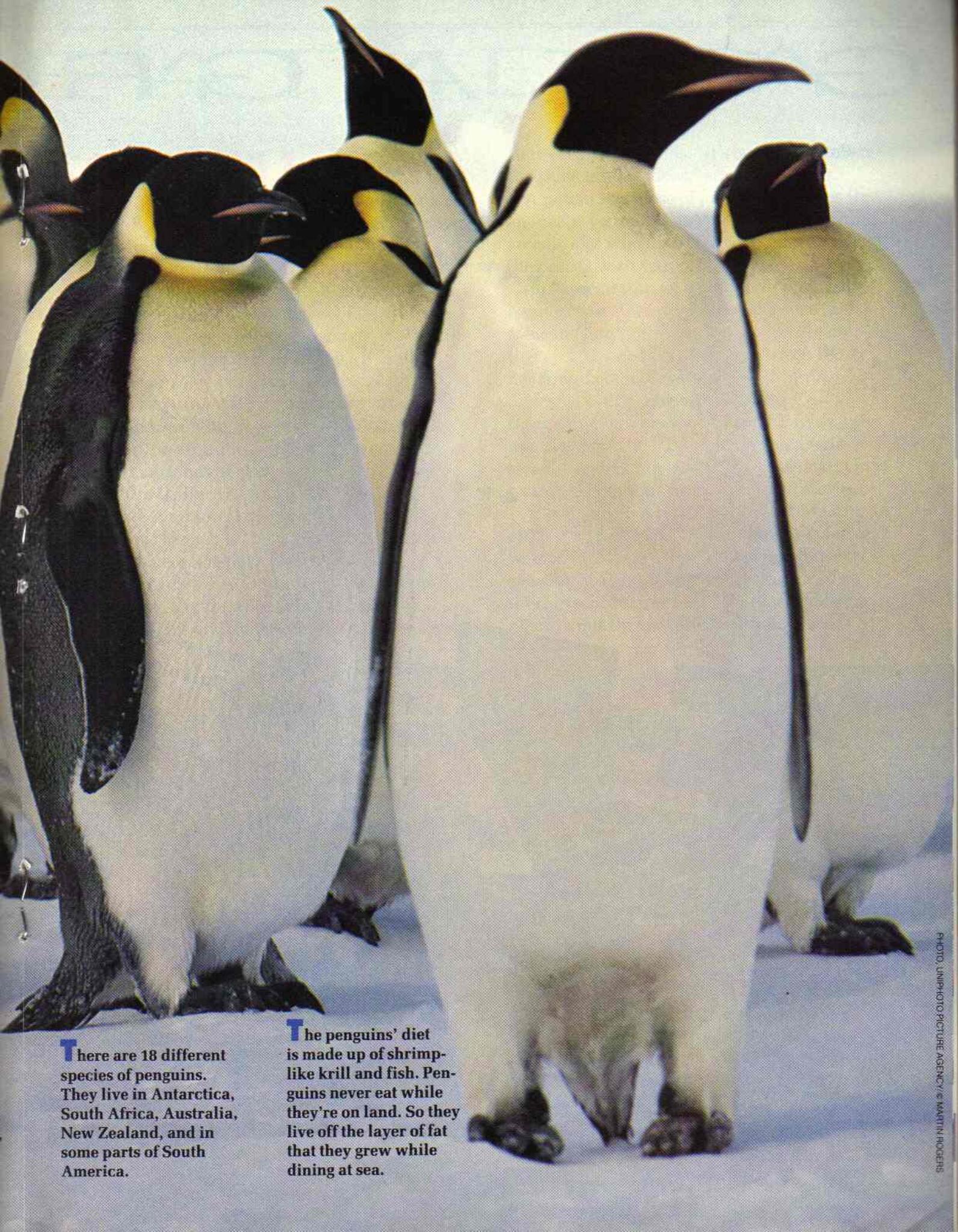


The penguin's black and white feathers provide protection against enemies. If the enemy is hunting from above, the black feathers blend with the dark ocean. If the enemy is coming from below, the white feathers can't be seen against the water.

When penguins mate, they bow and dance. All that fancy footwork pays off. Each year, the pair of birds returns to the same spot where they mated the year before. Their sense of direction is amazingly sharp.

Penguins are birds, but they can't fly. They're real good swimmers, though, spending up to nine months a year in the water.

The Emperor penguin can dive deeper than any other bird...over 800 feet! Penguins walk, swim, or slide across the ice on their bellies.



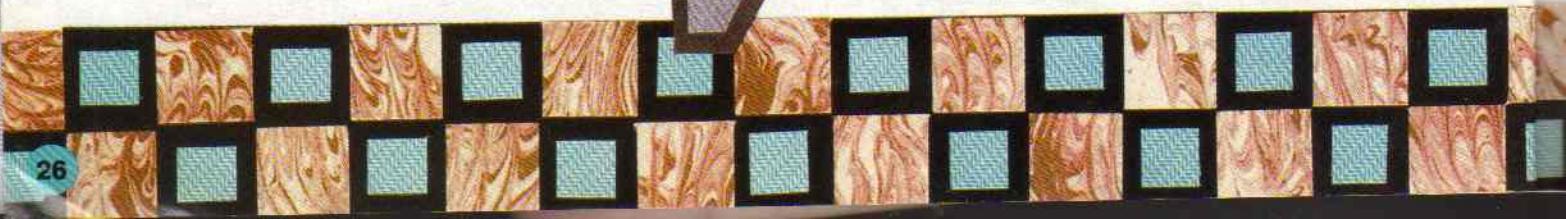
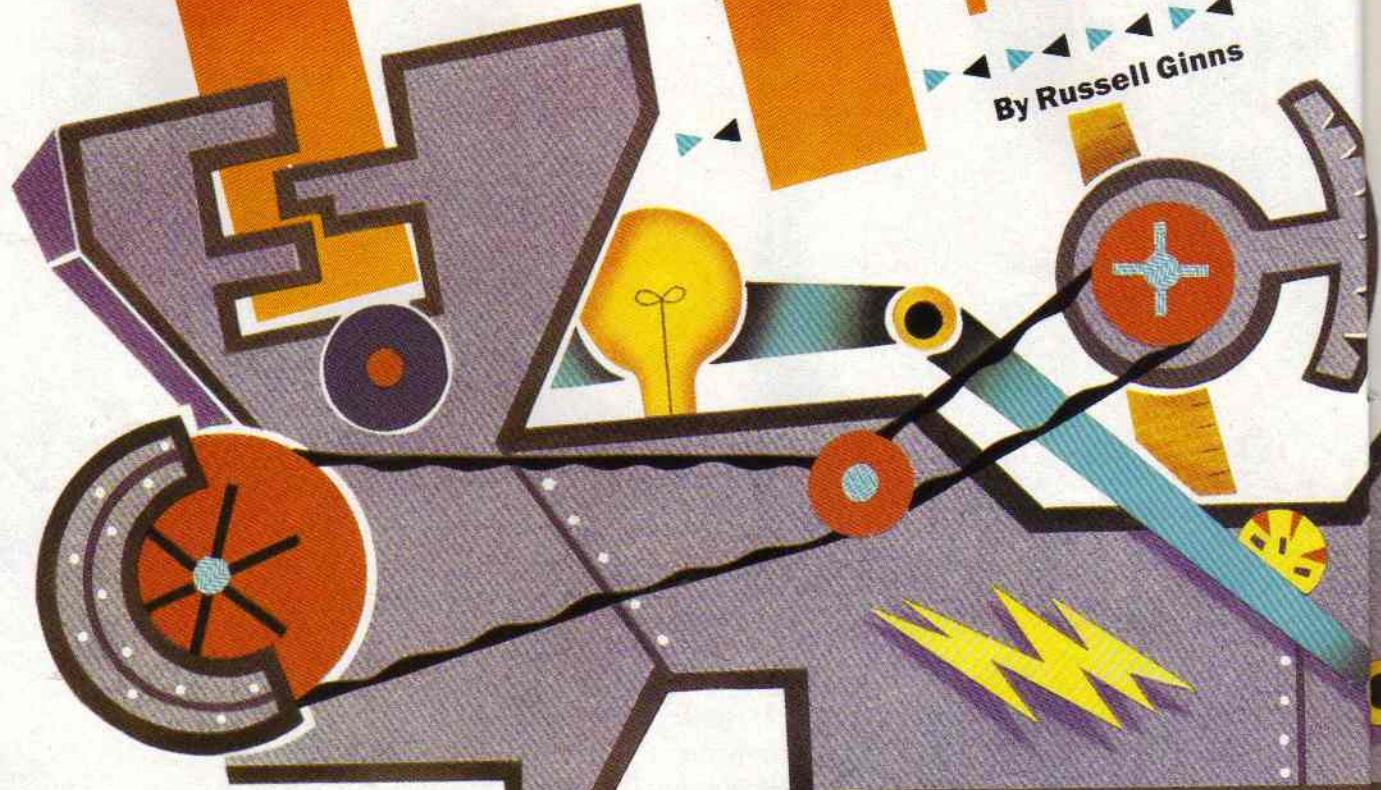
There are 18 different species of penguins. They live in Antarctica, South Africa, Australia, New Zealand, and in some parts of South America.

The penguins' diet is made up of shrimp-like krill and fish. Penguins never eat while they're on land. So they live off the layer of fat that they grew while dining at sea.

GOT A GRE

PATENT IT!

By Russell Ginn



EAT IDEA?

EUREKA!

You've just come up with a fantastic new invention: A bicycle helmet for fish, or maybe an automatic shoelace-tying machine. You're a genius! But what should you do with your idea?

You could build your amazing invention and use it around your house. Or you could show it off to your friends. But what if it's a really great invention and you're convinced no one should be without it? If you think your idea is the latest greatest discovery—like the light bulb or the airplane—you might want to do what thousands of inventors do every week: Visit the United States Patent Office.

The Patent and Trademark Office (the PTO) is a branch of the U.S. government that protects people's ideas and inventions.

"There are three kinds of property," Donald Quigg, Commissioner of the PTO told CONTACT. Land and possessions (a bicycle or

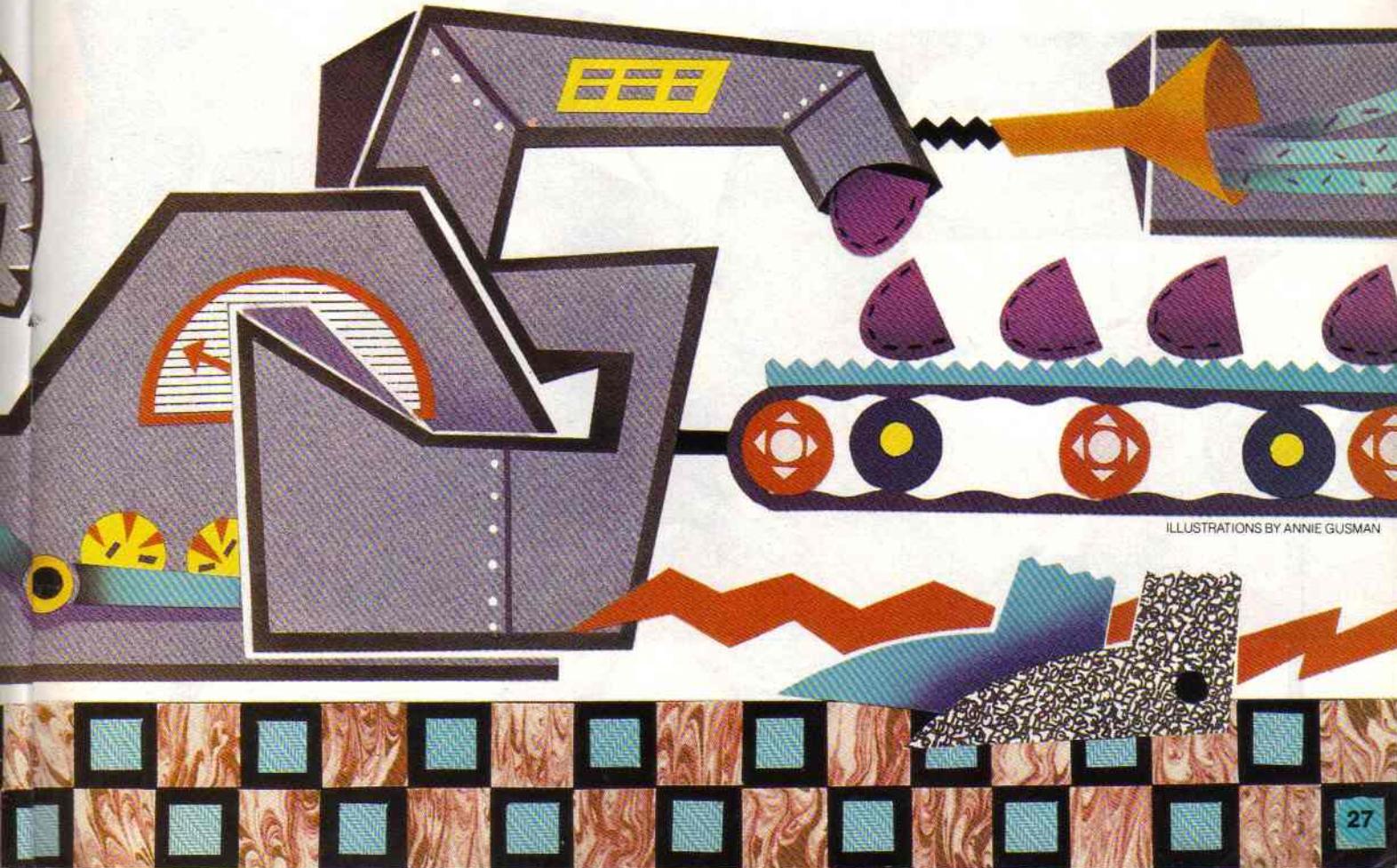
clothes) are two kinds. "It's our job to protect the third kind—ideas," says Mr. Quigg.

A patent is a piece of paper that proves that an idea is yours. When you patent something, anyone else who uses your idea has to share the profits with you.

So how can you get a patent for your fish helmet? The first step is to make sure that someone hasn't already invented it. To do that, you'll probably have to go to the PTO headquarters in Crystal City, Virginia.

If you've seen movies like *Chitty Chitty Bang Bang* or *Honey, I Shrunk the Kids*, you might expect the PTO to be crowded with strange old men in long white coats, carrying weird contraptions from their laboratories.

"That's just not true," says Oscar Mastin, an official with the PTO. "Inventors are men and women of all ages. They dress just like everyone else." No one brings in working models of their inventions, either. "There would be no place to put them," Mr. Mastin notes. ■



ILLUSTRATIONS BY ANNIE GUSMAN

But over the years, some pretty strange things have been patented. Take the dog-powered car, for instance, or a parachute hat and eyeglasses for chickens. There's even a patent for a rocking chair that makes butter while it rocks.

Every Tuesday, the PTO announces about 1,500 new patents. On the week that CONTACT paid a visit, new patents included: A type of TV-dinner tray, three new toothbrushes, an automatic Ping-Pong ball server, a shrimp peeler, four new wristwatches, an improved golf ball, and more than 1,000 other gadgets, designs and formulas.

The busiest part of the PTO is the search room. That's where anyone can go to find out if an idea is the first of its kind. About 27 million patents are on file there. With that many patents around, you might think that very few people come up with anything new. Nope! The PTO gets more than 400 new applications every day.

Once you're sure that you're the first person

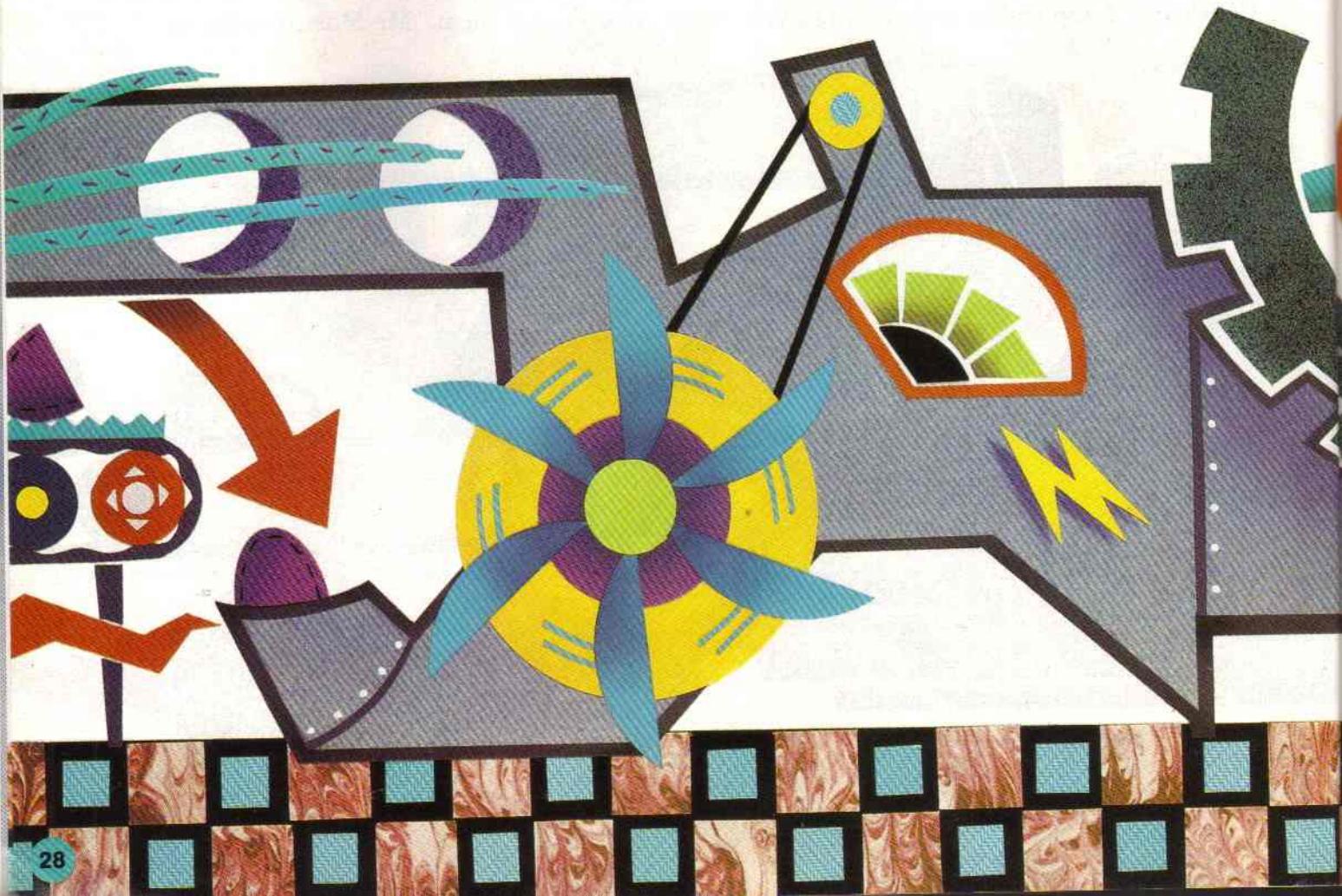
to invent the fish helmet, then you can apply for a patent. A patent application includes a drawing of the invention, and a description of what it does and how it works. When the PTO gets an application, it's given to the experts—the patent examiners.

Experts on Everything

About 1,000 of the men and women who work at the PTO are patent examiners. Each one is an expert on a few topics. Together, it's their job to know everything about everything. Whether an invention is a new kind of potato peeler or a 200-page chemical formula, one of the examiners has to understand how it works.

An examiner will give an inventor a patent if two things are true about the invention: It must be original—no one has patented it before. And secondly—it works!

"It's sad when an inventor comes in and finds out that someone wrote about his inven-



tion in a book 100 years ago," examiner Al Smith told CONTACT. "Or when someone really believes his invention works, but we prove that it doesn't."

Once Mr. Smith didn't think that a machine really worked, so he told the inventor to build a working model. Instead, the inventor sent in a picture of himself and his family standing next to the machine, waving a sign that said: "IT WORKS!" That wasn't good enough proof, so he didn't get a patent.

But examiners never make fun of people's ideas, no matter how crazy their inventions might seem.

"We wish all the inventions would work," says Al Smith. "We try to help people prove that they do. Some ideas may seem crazy, but great inventors have to be a little crazy—they have to see things that don't exist."

Should anyone who comes up with a great idea hop on the next train to Virginia and start searching through the patent library? Probably not. It takes a lot of time and money

(\$1,000 or more). And fewer than five percent of all patents ever wind up being used or sold. That's a lot of trouble to go through if no one is ever going to use your invention.

But that doesn't mean that you shouldn't try your hand at being an inventor.

According to Commissioner Donald Quigg, getting a patent isn't the main reason to think up inventions. "It's important to try to invent things just to practice being creative." ♦

BE AN INVENTOR!

If you'd like to find out more about inventing, you might want to get your class involved with Project XL. It's a program that helps kids make up their own inventions.

Ask your teacher to write to:

Project XL
Patent and Trademark Office
Washington, DC 20231



THE SLIPPED DISK SHOW

Happy New Year, Hackers! Slipped Disk, here, welcoming you to the year 1990. Just think, it's only 10 more years until the year 2000! This morning, my crazy dog, Floppy, bet me that by the year 2000, a dog will land on the moon. How could a dog go to the moon? No leash is long enough to reach there!

Well, I don't have to go to the moon to answer our first question. It's right here in my hand. *Rachel Peer, 12, of Taneytown, Maryland, asks:*

"Do computers make errors?"

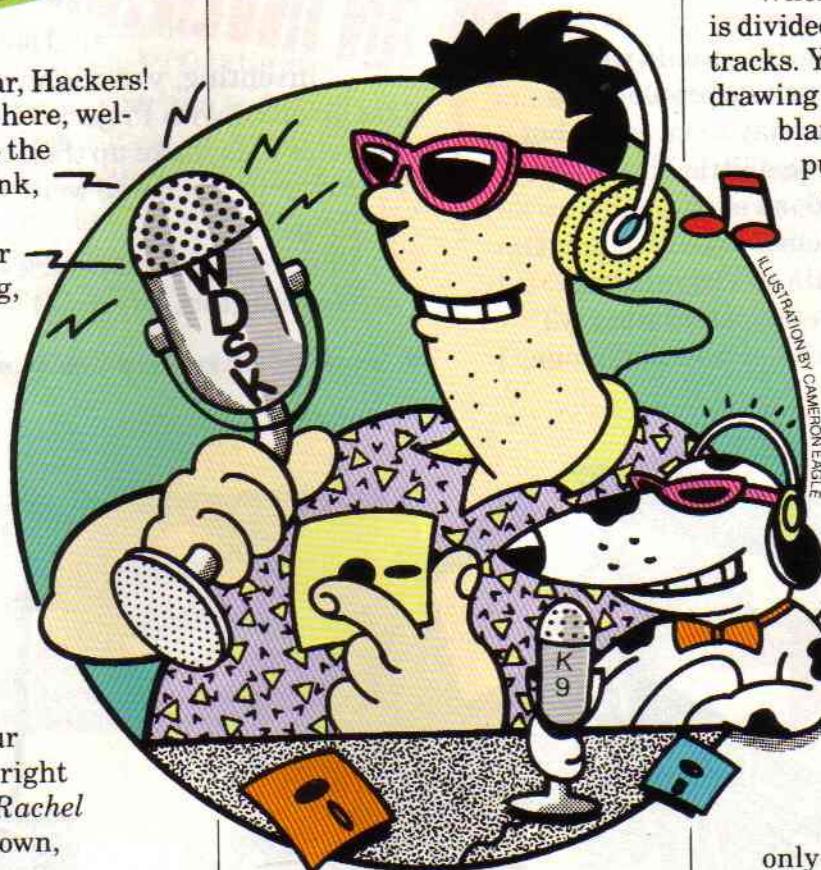
Rachel, some computers make errors all the time. My uncle's computer likes to wear a striped tie with a plaid shirt! What an error!



But seriously, computers seldom make mistakes—they leave that to us careless hu-

mans. Usually, when someone says "the computer goofed," they really mean that someone gave the computer the wrong instructions.

However, computers are just machines and like all machines, they can break down. When they do, it sometimes causes them to make mistakes in their calculations. For example, computers sometimes lose



information when they record data on a disk or send data to another computer. Or the computer can overheat, causing errors. But usually when this happens, the computer just doesn't work.

Speaking of work, I better get to work and answer our next question. *Jill Weisman, of Brewster, New York, asks:*

"What is formatting and how do you do it?"

Jill, when you buy a blank floppy disk at the store, it's really blank. Think of it as a big piece of unlined paper. Your computer can't use it that way. It needs a kind of electronic map written on the disk, one that tells it where to put information. This map, or format, is recorded right on the disk before anything else.

When a disk is formatted, it is divided up into sectors and tracks. You can think of this as drawing a graph on a piece of blank paper. Your computer uses these sectors and tracks as a guide to storing information.

Then when the computer needs to retrieve information, it knows just what part of the disk to "read."

And speaking of reading, I don't have time to read more letters for this edition of the Slipped Disk Show.



But Floppy and I will be back next month. (When it will be

only 9 years and 11 months until the year 2000!) Remember, if you have any computer questions you'd like answered, send them to me at:

THE SLIPPED DISK SHOW
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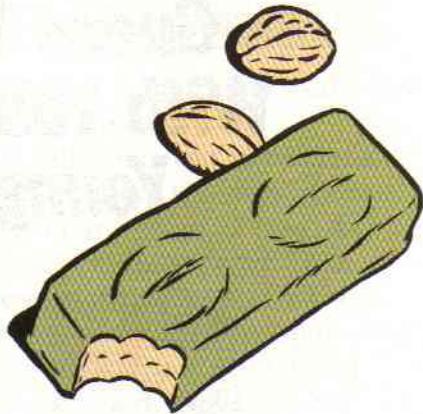
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THE BLOODHOUND GANG



THE CASE OF THE SEMI-SWEET SNEAK

by Michael Dayton



The lady was holding a snake. A big snake—at least six feet long. "I'm Betsy Bilger," she said. "And this is my darling pet boa constrictor, Snuggles."

"How do you do," said Vikki. She eyed the snake warily as she shook hands with Mrs. Bilger. "This is Skip and this is Ricardo. The Bloodhound Gang at your service."

"Do sit down," said Betsy, "and have one of our chocolates."

Mrs. Bilger was president of the Heaven Scent Chocolate Company. She had summoned the Gang to her office for help with a case.

"There have been a series of 'accidents' around the factory," she explained. "One weekend the heat was left on high in the storage room. All the chocolate was ruined. Last weekend a gas line to the stove was cut. A full day's work was lost."

"Do you suspect one of your employees?" Skip asked, munching a handful of chocolates.

"I'm afraid so," Betsy said. "Today I found chocolate stains on an order form. That means somebody has been snooping through my notes. I don't know what they want. But one more 'accident' and I'll be out of business. Snuggles and I will be broke."

She kissed Snuggles, who seemed to

like it.

"Ugh," said Ricardo. "I think it's time we toured your factory."

Chocolate Factory



Betsy put Snuggles in a glass aquarium, then led the Bloodhound Gang through the building. The first stop was the melting room.

Vinnie, a short man with a red face, waved when they came in. He was wearing a white lab jacket and standing before a small machine. Betsy told the Gang that she bought chocolate in large 10-pound bars from another company. These large bars were placed in the melter and heated to 90 degrees.

Skip stuck his finger in the hot chocolate and licked it. When he looked up, everyone was staring at him. "Yum," he said, meekly.



ILLUSTRATIONS BY STEVE VANCE

They walked to the next room. Ricardo shivered. "Does Snuggles like it so cold?"

"Snuggles hates the cold," replied Mrs. Bilger. "But chocolate needs to be stored at 50 degrees. If we make it hotter than that, the chocolate will bloom in about eight hours. Follow me."

"Bloom?" asked Vikki, as they headed down

another hallway.

"The heat breaks down the chocolate crystals," Betsy explained. "The cocoa butter rises to the surface of the chocolate and covers it with a white powder. It's very unsightly. I love the smell in here, don't you?"

They had entered a small room where a woman named Darlene was cooking pecans in a sugar sauce over a stove. The room was very hot. Darlene had on a white lab coat.

"I'm making the nuts for our chocolate pecan bars," she explained. "When they're ready—and I think they are now—I'll dip them into the melted chocolate."

Darlene carried a tray of pecans into another room with a long table. Vinnie was there with a vat of melted chocolate. He poured the chocolate into molds. Then Darlene placed pecans in each mold. She repeated this until all the pecans had been used.

Next, Darlene carried the tray of chocolate bars to another room. Here the temperature was very cool.

"This is where the bars *set up* before they're wrapped," Betsy said. She introduced Bradley, a tall man with thick black eyebrows. He spoke with a heavy accent. He said he was from London, England. Like the others, he too wore a white jacket. He wrapped each treat in cellophane, put on a small Heaven Scent sticker, and placed the candy bar in a box.

"And this is the finished product?" Skip asked.

"Sure is, mate," Bradley said. "It's as good as the chocolate King Charles eats today. Here. Have some."

"Don't mind if I do," Skip said. Bradley broke the bar in two, gave one half to Skip and dropped the other half into his coat pocket. Skip devoured the candy.

They left Bradley and stepped into the hall.

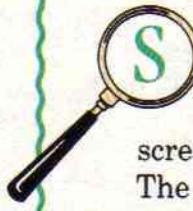
"That's it," Betsy said. "The whole works."

"It didn't help much," Vikki said. "They all handle chocolate. Any one of them could have left those chocolate stains in your office."

"I learned one thing," Skip said. "Heaven Scent chocolate is fantastic. But too much of it makes you a little—queasy."

He smiled weakly. His face was a delicate shade of green.

The Search for Snuggles



kip's stomach didn't feel better till the next morning. At least it felt better until Mrs. Bilger phoned. She was screaming hysterically. Snuggles was gone.

The Gang biked over to the factory. While Ricardo tried to calm her down, Skip and Vikki searched for the snake. "If you were Snuggles, where would you hide?" Skip said.

"Snakes like heat," said Vikki. "If I were Snuggles, I'd hang out in the hottest room."

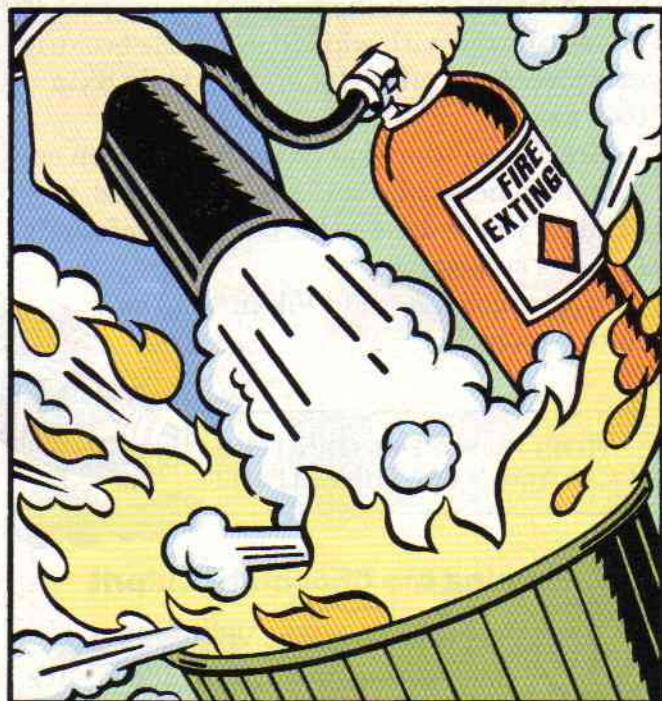
"The kitchen!" said Skip.

Sure enough, they found Snuggles curled up under the stove. They called Mrs. Bilger who raced into the room and began tearfully begging Snuggles to come out. Finally, Snuggles slithered into her arms.

"Found her, eh?" said Bradley, sticking his head in the doorway.

"Yes," said Mrs. Bilger, hugging Snuggles. "But now I want to find out who let her out."

"Hey," said Skip. "Look at this."



He was pointing at a heavy safe that sat in the far corner.

"That's where we keep all our recipes," said Mrs. Bilger. "I probably don't need to keep them locked up but the way things have been going around here lately..."

"Looks like you do need to keep them locked up," said Skip. "Someone's been trying to

THE BLOODHOUND GANG

crowbar this safe open."

They all gathered around and looked at the safe door. The metal was scratched and bent, as if someone had been trying to pry it open.

"I looked at this safe yesterday and it was fine," said Ricardo.

"That means," said Vikki, "that someone tried to break into the safe last night."

"Well it wasn't me," said Vinnie. Along with Darlene, he had come in to see what all the fuss was about.

"It wasn't me either," said Darlene, nervously wringing her hands.

"Well, I guess it wasn't any of us," said Bradley. "This calls for a celebration!" He pulled a half-bar of chocolate out of his pocket. It was covered with white powder. He broke it into pieces and offered it around. Only Skip took a piece.

Mrs. Bilger glared at Skip. "You've been on this case one whole day," she stammered. "And all you've done so far is eat a lot of candy. I want a culprit."

"You've got one," said Vikki. "And he's in this room."

STOP—BEFORE READING ON,
CAN YOU NAME THE CULPRIT?



Naming the Chocolate Culprit

Everyone stared at Vikki. She paused a moment, then added: "It's Bradley."

"Me? That's absurd," Bradley said. "I haven't been in this kitchen in weeks."

"Yes you have," Vikki said. "This kitchen is hot. Hot enough to make the chocolate bar in your pocket 'bloom.' You dropped that candy into your pocket yesterday afternoon. Then

you must have spent about eight hours in here trying to get into that safe!"

"Your story about being from England is rotten, too," added Ricardo. "Any true Englishman would know Charles is Prince—and not King—as you said."

Everyone looked at Bradley. When he spoke his English accent was gone.

"You're right," he admitted. "I'm not English. In fact, I'm from Cleveland, Ohio."

"Why have you caused all this trouble?" Betsy asked.



"Devil's Food Cake Company," he muttered. "You're both bidding on a contract with Nor-candy Vending Company for a space in their candy machines. Devil's Food paid me to disrupt your business."

"You're fired," Betsy said.

"Great," Bradley said. He stuck his tongue out at the snake. "I'm tired of working around reptiles, anyway."

"Don't listen to him," Ricardo told Snuggles. "You're a real sweetheart."

"And you are a snake charmer," Betsy said. "Here, you can hold him."

She passed the snake to Ricardo.

"Ugh," Ricardo said. "Me and my big mouth." ♦

THE END

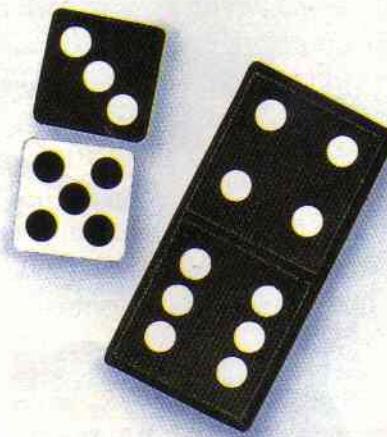
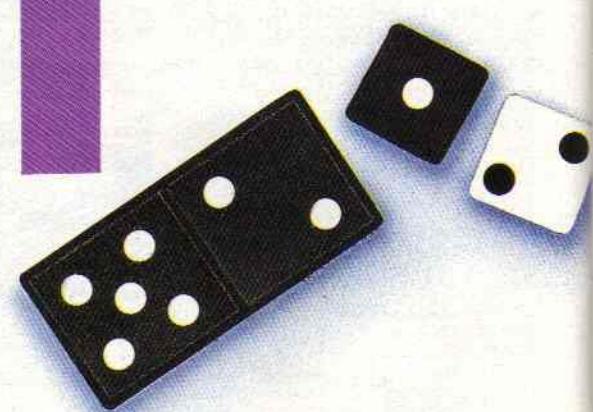
THE BLOODHOUND GANG

Whenever there's trouble,
We're here on the double...



S Q U A R E O N E B O A R D G M E

P



Kablamistan



SHARK PLACE

RENT \$35.	
With 1 House	\$ 175.
With 2 Houses	300.
With 3 Houses	1100.
With 4 Houses	1300.
With HOTEL \$1500.	
Mortgage Value \$175.	
Houses cost \$200, each	
Hotels, \$200, plus 4 houses	

If a player owns ALL the lots of any Color Group, the rent is Doubled on Unimproved lots in that group.



SILLY NOISE AVE.

RENT \$20.	
With 1 House	\$100.
With 2 Houses	300.
With 3 Houses	750.
With 4 Houses	925.
With HOTEL \$1100.	
Mortgage Value \$120.	
Houses cost \$150, each	
Hotels, \$150, plus 4 houses	

If a player owns ALL the lots of any Color Group, the rent is Doubled on Unimproved lots in that group.

Tidyland



Mr. Greenish



INBANANA AVE.

RENT \$18.	
With 1 House	\$ 90.
With 2 Houses	250.
With 3 Houses	700.
With 4 Houses	875.
With HOTEL \$1050.	
Mortgage Value \$110.	
Houses cost \$150, each	
Hotels, \$150, plus 4 houses	

If a player owns ALL the lots of any Color Group, the rent is Doubled on Unimproved lots in that group.

SWORDWALK

RENT \$50.	
With 1 House	\$ 200.
With 2 Houses	600.
With 3 Houses	1400.
With 4 Houses	1700.
With HOTEL \$2000.	
Mortgage Value \$200.	
Houses cost \$200, each	
Hotels, \$200, plus 4 houses	

If a player owns ALL the lots of any Color Group, the rent is Doubled on Unimproved lots in that group.

Mrs. Fright



Fidonia

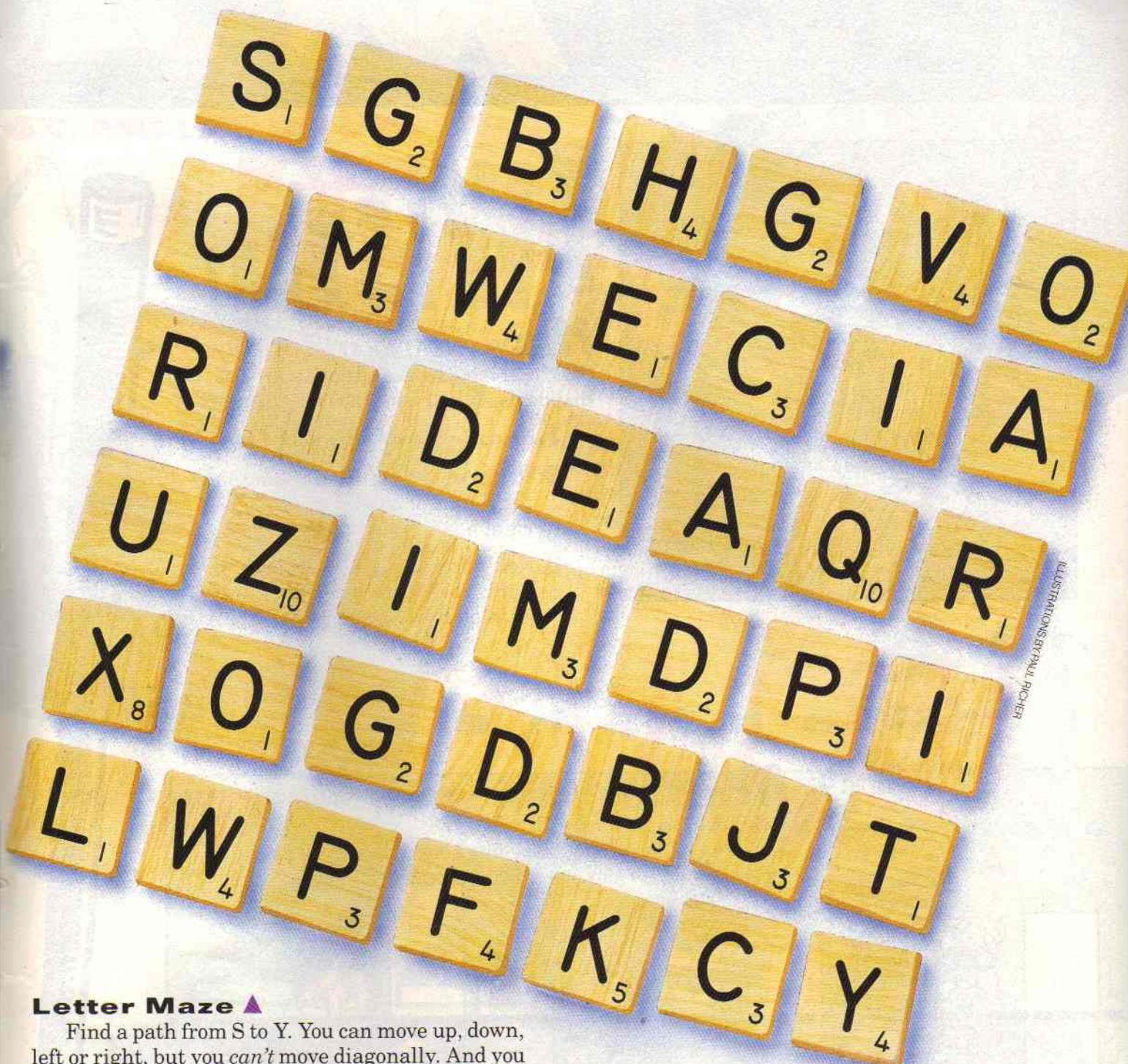


It's All In the Cards ▲

Look at the names, colors and shapes to figure out the pattern in the row of six cards. Can you guess which of these three cards should go next?



Z Z L E S



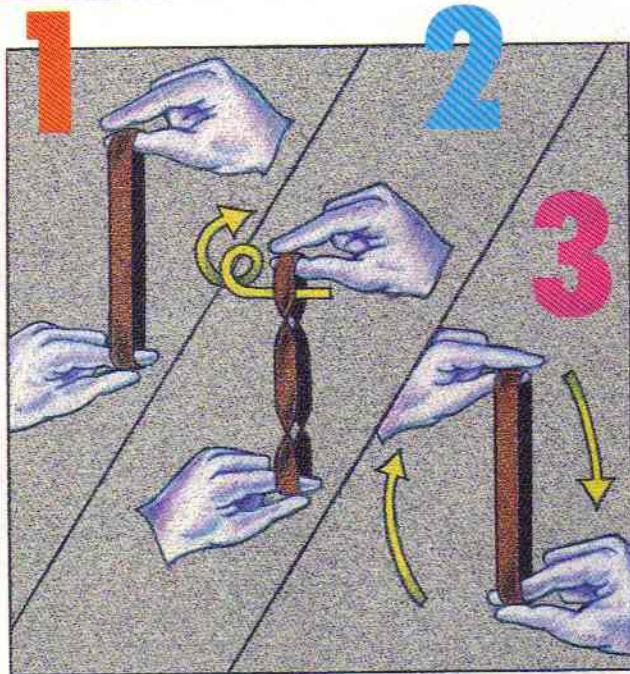
Letter Maze ▲

Find a path from S to Y. You can move up, down, left or right, but you *can't* move diagonally. And you can only move to a space if the number on the space is one more or two less than the space you're on.

For example, from M you can move to W because it's one more. Also, you could move to O or I because they're two less.

Answers on the Did It! page.

CREEP INTO THE WORLD OF...
**BLACKSTONE'S
M**



MATH TRICKS TO

It's A

TWISTER!

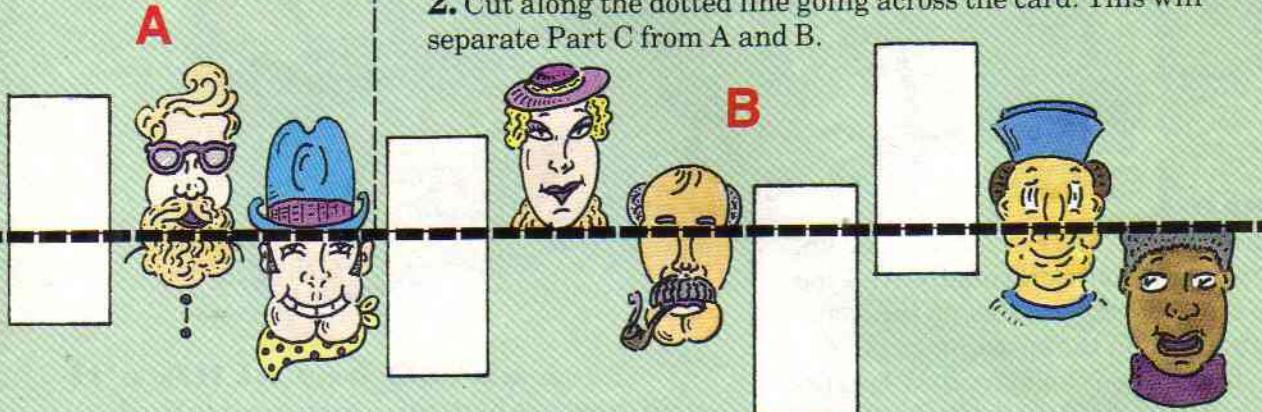
HERE'S A NEAT FEAT OF TOPOLOGY (top-AH-low-gee). That's a kind of math that deals with unusual shapes and twists.

1. Hold a wide rubberband like this.
2. Roll the band over twice using only the thumb and index finger of your right hand.
3. Now raise your left hand above your right. The twists disappear. Lower your left hand again. The twists return.

The
LADY vanishes

MAKE A PERSON DISAPPEAR! HERE'S HOW:

1. Cut out the card from the magazine.
2. Cut along the dotted line going across the card. This will separate Part C from A and B.



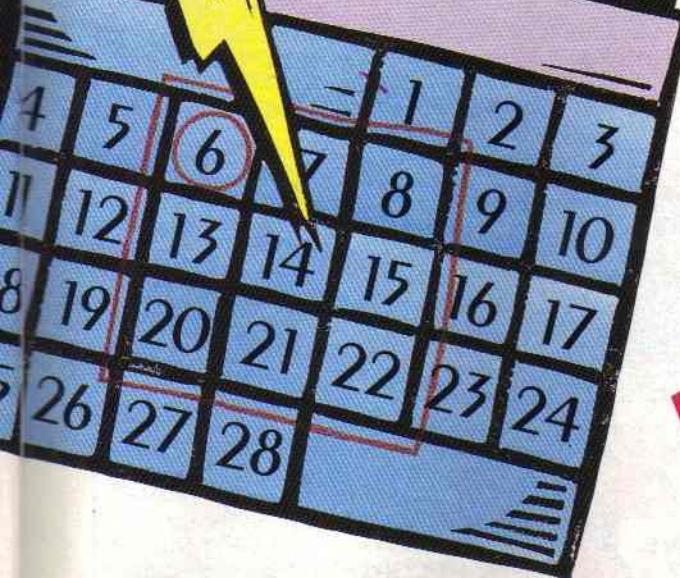
3. Cut along the dotted line going down. Part A and B will be separated.
4. Switch the positions of A and B. Place them along the edge of C—to line up the top and bottom parts of the faces.
5. A lady will disappear!

GIG

AMAZE YOUR FRIENDS

LIGHTNING

calculator



WHILE YOUR BACK IS TURNED, SOMEONE draws a large square on a calendar. The square must go around nine dates. (See diagram.) They tell you the smallest number in the square. Almost immediately you announce the sum total of all nine dates.

How do you do it?

Add eight to the smallest number.

Multiply by nine.



ITO PREPARE FOR THIS TRICK, SECRETLY STASH ALL FOUR ACES AT THE TOP OF A DECK OF CARDS. Now hand the deck to a friend. Tell her to cut the deck into four piles, as shown above. Keep track of which pile has the aces on top. Let's call that Pile #1.

Now tell your friend to do the following: Pick up Pile #2. Take the top three cards from Pile #2 and put them on the bottom of Pile #2. Then deal one card face down on each of the other piles. Put Pile #2 back down and repeat both of these steps with the other three piles, doing Pile #1 (the one with the aces) *last*.

Now tell her to turn over the four top cards. They will all be aces.

HONEY, I SHRUNK THE SLOBS

STORY: BILLY ARONSON ART: KEITH WILSON

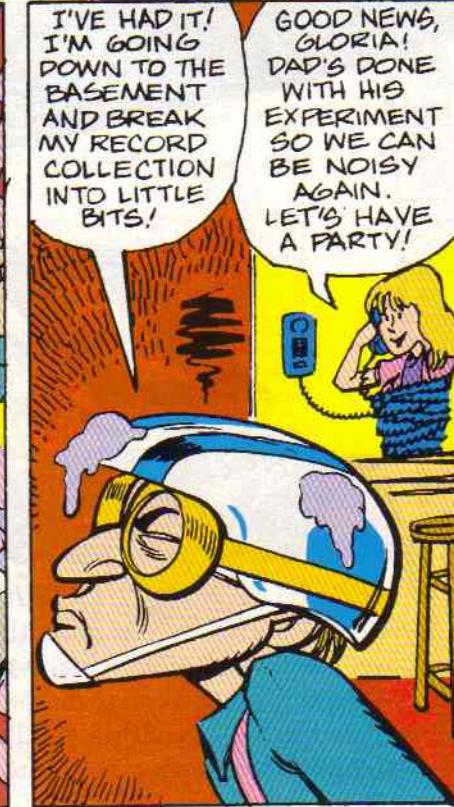
I'M TELLING YOU, GLORIA, I'VE GOT THE WEIRDEST FAMILY IN THE WORLD!

A PUZZLE:

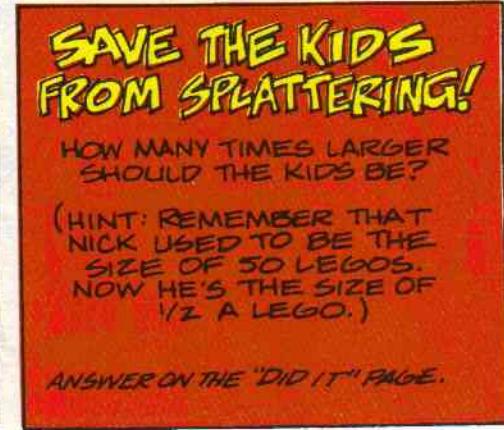
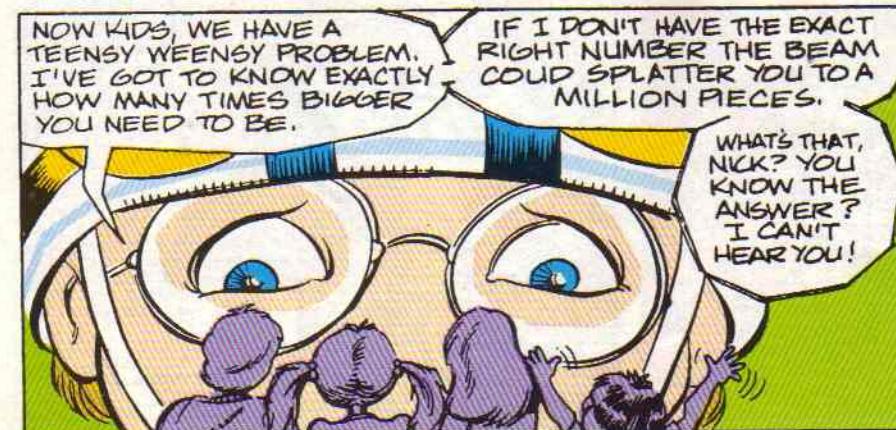
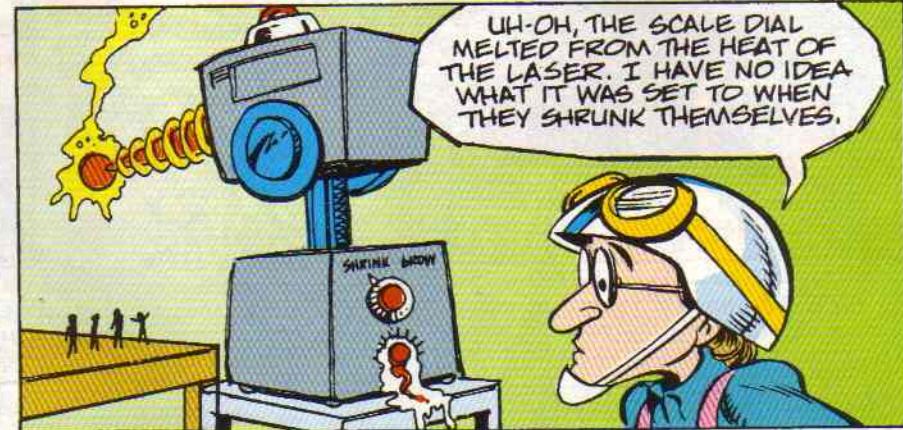
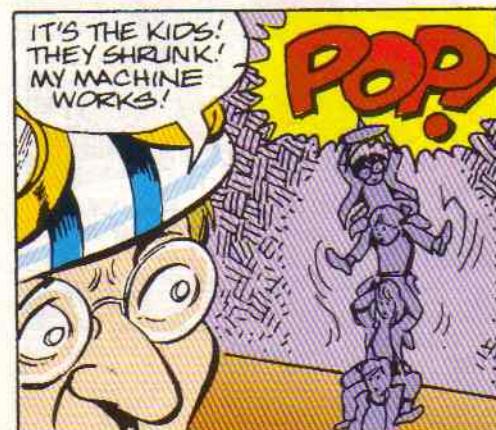
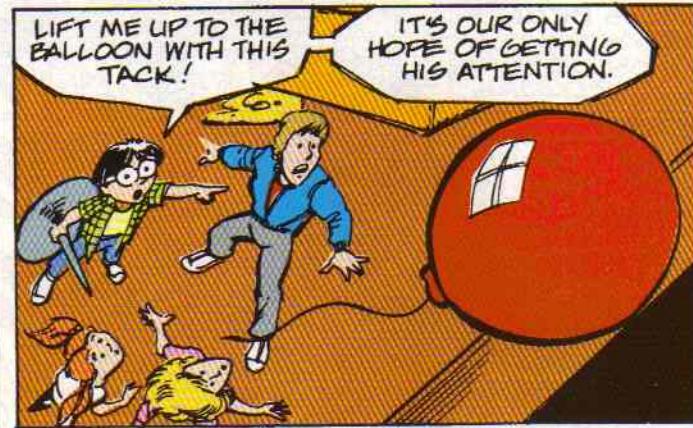
"MY DAD'S UPSTAIRS WORKING ON SOME CRAZY CONTRAPTION THAT'S GONNA MAKE THINGS SHRINK OR GROW..."



"...WHILE MY LITTLE BROTHER'S BUILDING HIS OWN SCIENCE LAB COMPLETELY OUT OF LEGOS. HE'S EVEN PUTTING IN A LEGO COUCH!"





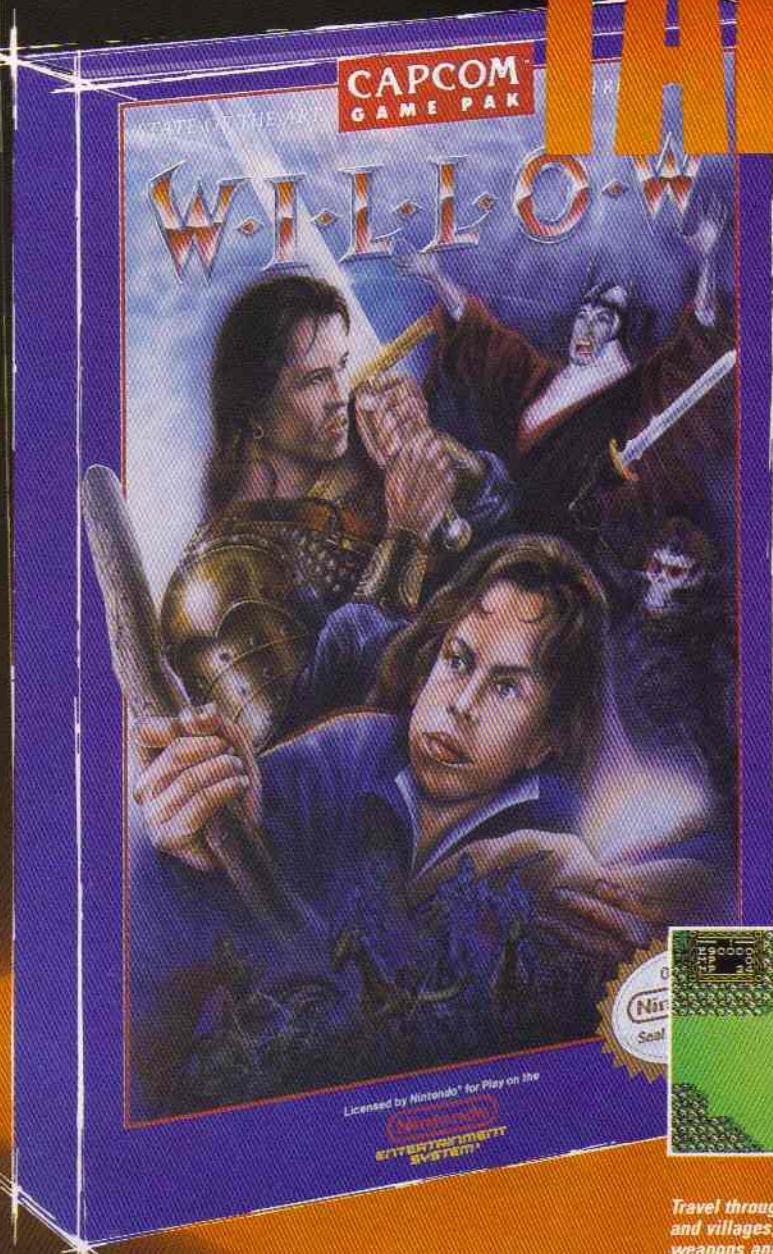


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PREPARE FOR A

WICKED FANTASY



Travel back to a time of sorcery and magic when the evil Queen Bavmorda ruled the land under a reign of terror.

According to legend, a baby has been born who will destroy the heartless ruler. But the Queen vows she'll slay the child first!

As Willow, the child's chosen protector, you must face the deadly challenge of mysterious forests and villages while battling the Queen's Nockmaar army. In the meantime, your fate depends on collecting an arsenal of swords, shields and magic for the ultimate confrontation with the Queen!

So prepare yourself for the only action fantasy with wicked graphics and playability. From Capcom U.S.A.



Travel through mysterious forests and villages; accumulating weapons and magic.



Be on guard for an action-filled battle with Queen Bavmorda.

BASIC TRAINING

Programs For Your Computer

MISSION: STAR ARK

An Animal Rescue Game for Two Players

It's the year 2489. Earthlings have moved to another planet! Why? Because the polar ice caps have melted and Earth is flooding.

Unfortunately, many animals were left behind. In this game, it's up to you to rescue them by gathering them *in pairs*, male and female.

The animals are hiding in a lot of weird places. Begin by typing START,START and enter. Then enter each guess by typing in the name of a place—all in capital letters followed by a comma, and then another place, also in capital letters. For instance if you think that one giraffe is hiding in the tree and the other is in the cave, type: TREE,CAVE.

If you've got a match, the two giraffes will show up on your spaceship. If you're wrong, you'll see the names of the animals that *are* hiding there. Whichever spaceship ends up with more pairs wins.

Here's a memory tip. *Picture* the animal in its hiding place. You can also use the Infra-

red Bio-tracker, also known as the HINT (type HINT,HINT and enter). This will reveal all of the animals' hiding places, but only for a second.

STAR ARK

for all computers: the & indicates a single space.

for Commodore-64, change lines 2 and 3 and 7 to the following:

```
2 PRINT CHR$(147)
3 RND(-TI)
7 DELAY = 500
```

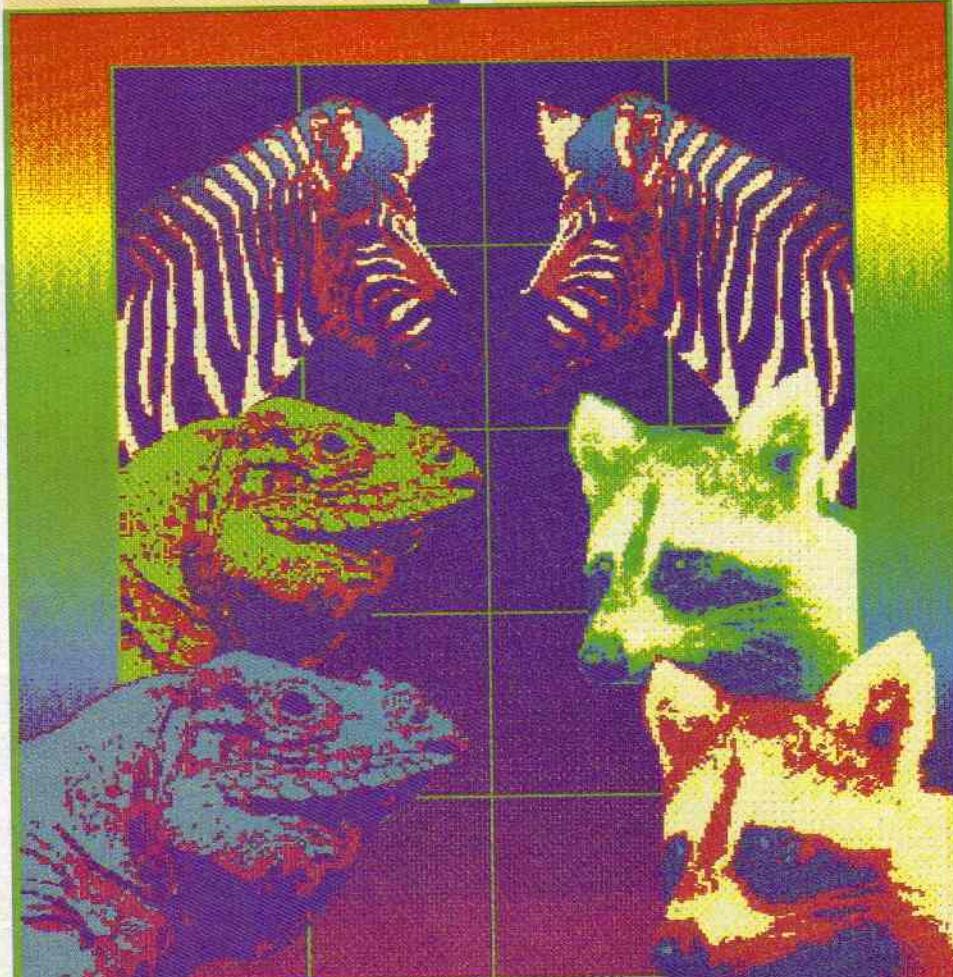
for IBM make no changes.

for Apple-II, change lines 2 and 3 and 7 to the following:

```
2 HOME
3 REM
7 DELAY = 500
```

Note: if the HINT is too long or too short, try adjusting line 7
DELAY = a larger or smaller number

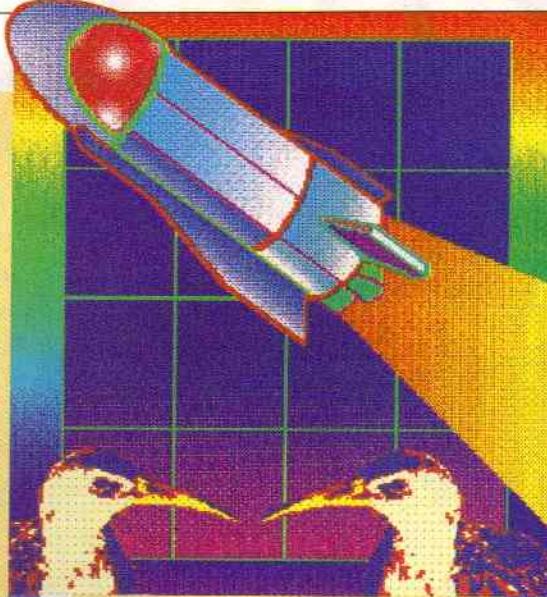
```
1 GOTO 7
2 CLS
3 RANDOMIZE TIMER
4 RETURN
7 DELAY = 3000
10 DIM A$(36),B$(18),C$(36),S$(36)
11 DIM J$(36), K(36), L(36), M(36),
N(36)
13 GOTO 1000
15 FOR X = 1 TO 36
```



ILLUSTRATIONS BY MARTIN LEMELMAN

```

16 READ J$(X):READ K(X):
NEXT X
17 FOR X = 1 TO 18
18 READ B$(X):READ L(X):
NEXT X
19 RETURN
20 FOR X = 1 TO 18
22 C$(X) = B$(X): M(X) = L(X):
NEXT X
25 FOR X = 1 TO 18
27 C$(X+18) = B$(X):
M(X+18) = L(X): NEXT X
28 ANIMAL1$= "PROXIMA HAS <":
ANIMAL2$= "CENTAURI HAS <"
29 NA = 0:NB = 0
30 FOR X = 1 TO 36
40 R = INT(RND(1) * 36) + 1
42 IF C$(R) = "X" THEN 40
45 A$(X) = C$(R): N(X) = M(R)
50 C$(R) = "X"
55 NEXT X
60 FOR X = 1 TO 36 : S$(X) = "C":
NEXT X
70 RESTART = 0 : RETURN
100 GOSUB 2 : Z = 0
105 FOR X = 1 TO 36
115 Z = Z + 1: M = Z / 6
120 IF S$(X) = "A" THEN PRINT
A$(X); :FOR G = 1 TO N(X):
PRINT "<"; :NEXT G
130 IF S$(X) = "B" THEN
PRINT "<<<<<<<"; :NEXT G
140 IF S$(X) = "C" THEN PRINT
J$(Z); :FOR G = 1 TO K(X):
PRINT "<"; :NEXT G
150 IF M = INT(M) THEN PRINT :
PRINT
155 NEXT X
160 RETURN
200 PRINT : IF NA = 1 THEN PRINT
ANIMAL1$ : GOTO 205
203 PRINT "PROXIMA HAS NO
ANIMALS"
205 PRINT: IF NB = 1 THEN PRINT
ANIMAL2$ : GOTO 210
207 PRINT "CENTAURI HAS NO
ANIMALS"
210 PRINT
211 FOR X = 1 TO 36: IF S$(X) = "A"
THEN S$(X) = "C"
220 NEXT X
230 IF W = 0 THEN PRINT
"PROXIMA, "; : W = 1:GOTO 245
240 W = 0 : PRINT "CENTAURI, ";
245 PRINT "(FOR HINT: CHOOSE
HINT, HINT - TO RESTART:
START, START)"
250 INPUT "CHOOSE PLACE,
PLACE"; T$,V$
```



```

252 HINT = 0 : IF T$ = "HINT" THEN
HINT = 1: GOSUB 500: RETURN
253 IF T$ = "START" THEN
RESTART = 1 : RETURN
254 P = 40: Q = 40
255 FOR X = 1 TO 36
258 IF J$(X) = T$ THEN P = X
260 IF J$(X) = V$ THEN Q = X
265 NEXT X
270 IF P > 36 THEN 250
280 IF Q > 36 THEN 250
290 S$(P) = "A" : S$(Q) = "A"
295 RETURN
300 IF (HINT = 0 AND A$(P) = A$(Q))
THEN 320
310 RETURN
320 S$(P) = "B":S$(Q) = "B"
330 IF W = 0 THEN 350
340 ANIMAL1$ = ANIMAL1$+ "2 <" +
A$(P)+ "S <": NA = 1: RETURN
350 ANIMAL2$ = ANIMAL2$+ "2 <" +
A$(P)+ "S <": NB = 1 : RETURN
500 GOSUB 2 : Z = 0
505 FOR X = 1 TO 36
515 Z = Z + 1: M = Z / 6
520 PRINT A$(X); :FOR G = 1 TO
N(X) : PRINT "<"; :NEXT G
550 IF M = INT(M) THEN PRINT:PRINT
555 NEXT X
565 FOR K = 1 TO DELAY : NEXT K
570 IF W = 0 THEN W = 1:GOTO 598
575 W = 0
598 GOSUB 2
600 RETURN
1000 GOSUB 15
1100 GOSUB 20
1110 GOSUB 100
1120 GOSUB 200:IF RESTART = 1
GOTO 1100
1130 GOSUB 300
1150 GOTO 1110
1200 DATA TREE,4, CAVE,4, POND,4
```

```

1205 DATA BUSH,4, BARN,4,
HOUSE,3
1210 DATA TEMPLE,2, DESERT,2,
CHARIOT,1
1212 DATA RIVER,3, WELL,4,
HAY,5
1220 DATA NEST,4, FORT,4,
VALLEY,2
1225 DATA PYRAMID, 1,
GRAVE,3, CITY,4
1230 DATA MARKET,2, SEA,5,
POT,5
1235 DATA SNOW,4, BED,5,
HIGHWAY,1
1240 DATA LAUNDRY,1,
BUCKET,2
1245 DATA ORCHARD,1,
GARDEN,2, FOREST,2,
PALACE,2
1250 DATA TENT,4, BASKET,2
1255 DATA BATHTUB,1,
TAVERN,2, BOX,5, STABLE,2
1300 DATA **APE,3, **BOAR,2,
**EMU,3, **DOG,3
1305 DATA **EEL,3, **FOX,3,
**MOLE,2, **HOG,3
1310 DATA **LAMB,3, **OWL,3,
**RAT,3, **CAMEL,1
1320 DATA **LLAMA,1, **DINGO,1,
**HIPPO,1, **OTTER,1
1330 DATA **PANDA,1, **MOOSE,1
```

SEND US YOUR PROGRAMS

If you've written a program you'd like us to print, send it in. If we like it, we'll print it and send you \$25. Include a note telling us your name, address, age, T-shirt size and type of computer.

All programs must be your own original work. We cannot return programs. Please do not send discs.

Send your programs to:



EXTRA!

By Russell Ginns

SCRAMBLED INVENTIONS

You've just read about some silly inventions that never went anywhere. Now find some truly great discoveries that have changed our lives. Unscramble the words to find eight of the world's greatest inventions. The letters in the shaded boxes will spell out another idea that really "took off."

So you could find the answer,
we invented the Did It! page.

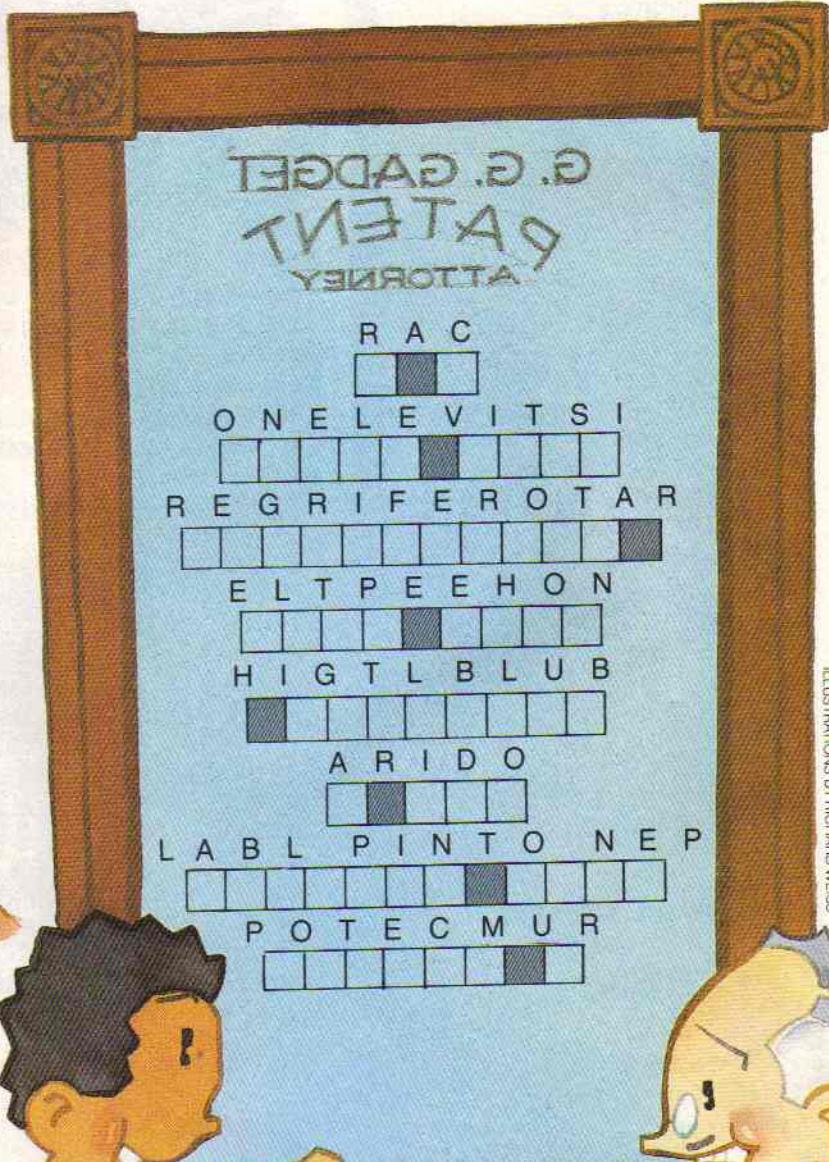
HIDDEN HOLIDAY HUNT

One of our favorite holidays is in February. And if you can read this secret message, you'll know what it is.

Just line up these groups of letters in order, from shortest to longest. Then you'll be able to read about that special day.

Answer on the Did It! page.

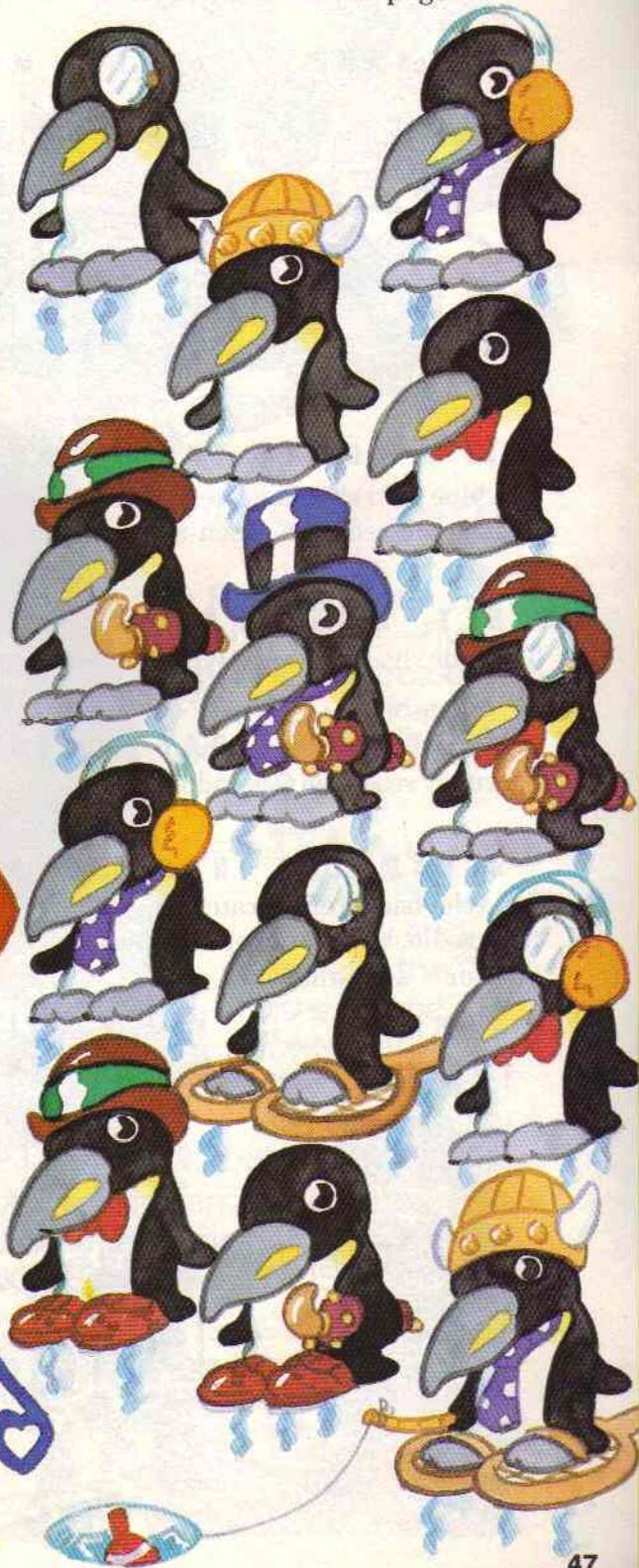
S G R O U N
R U A
F
D H O G G D A Y
E B
C O N D I
R Y S E



PICK A PAIR OF PENGUINS

Clyde is looking for his twin brother, Humphrey. But the iceberg is pretty crowded this year, and it's hard to tell one penguin from another. Can you find the two penguins that are identical?

Answer on the Did It! page.



LOOKING FOR LOVE

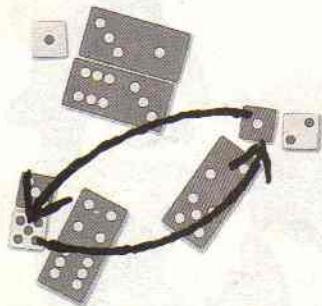
February 14th is Valentine's Day. But, sometimes, love is hard to find. How many hearts can you find hidden in this picture? There are 14 in all.

Look for the answer on the Did It! page.



Did It?

DOTS SWAP



LETTER MAZE



IT'S ALL IN THE CARDS

The blue card should go next. The pattern is: Blue-green-red-blue-green-red and so on.

HONEY, I SHRUNK THE SLOBBS

The kids should be exactly 100 times larger.

HIDDEN HOLIDAY HUNT

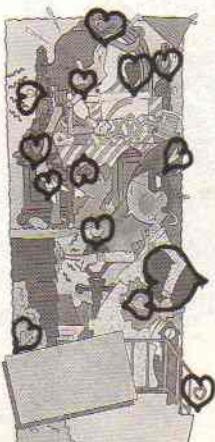
February second is Groundhog Day.

SCRAMBLED INVENTIONS

Car, television, refrigerator, telephone, light bulb, radio, ball point pen, computer.

Answer: airplane.

LOOKING FOR LOVE



PICK A PAIR OF PENGUINS



NEXT MONTH

Take a look at what's coming your way in the March issue of CONTACT.

ABOUT FACES

Did you know that some husbands and wives who have been married for a long time start to look alike? That amazing fact—and more—is coming your way in a story that's all about faces!

CAT CHAT

Some cats love to curl up next to their owners and others would rather be left alone. What's the reason for the difference in cat personalities? You'll find out about the latest research on cats in this furry story.

WALKING ON ICE

Join a group of explorers as they travel by foot to the North Pole.

PLUS



SQUARE ONE TV



THE BLOODHOUND GANG



BASIC TRAINING



AND MUCH, MUCH MORE!



3-2-1 CONTACT EXTRA!

Ready for a different kind of trash TV? Join Stephanie Yu as she brings you THE ROTTEN TRUTH about garbage. Where does it all go? How yucky is it? What can you do about it?

Watch for THE ROTTEN TRUTH, a new 3-2-1 CONTACT EXTRA. It will be shown in early February on PBS. (Check your local TV listings for the exact time and date.)

WOW!

MICKEY AND MINNIE IN AN EXCITING GAME ADVENTURE!



ARE YOU READY FOR...

- Falling spiders!
- Giant snakes! • Flying fish! • Hidden treasures!
- Pirates! • Alligators!
- Bouncing blue things!
- And more!

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Mickey and
Minnie in the first
Disney game
for Nintendo!
Race with them
as they rescue
a MYSTERY FRIEND!

Are you fast and clever enough to
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So get going with MICKEY MOUSECAPADE today!

This incredible Disney Mousecapade game is brought
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